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ABSTRACT

Four elementary students referred for special education evaluation were observed systematically for 2 entire days each at three different times within the referral-to-placement process. Data were recorded on 53 variables within six categories in 10 second intervals to examine changes in the nature of instruction and academic responding time as a function of going through the referral-to-placement process. Few consistent trends were observed, and extreme variability among students was found. In some cases, changes observed 1 month after the individualized education program (IEP) was written were no longer evident 2 months after the IEP was written. (Author/CL)

University of Minnesota

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- Referral
- Identification/Classification
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Abstract

Four students were observed systematically for two entire school days each at three different times within the referral-to-placement process. Data were recorded on 53 variables within six categories in 10-second intervals to examine changes in the nature of instruction and academic responding time as a function of going through the referral-to-placement process. Few consistent trends were observed and extreme variability among students was found. In some cases, changes observed one month after the IEP was written were no longer evident two months after the IEP was written. Limitations and implications of the study are discussed.

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Observed Changes in Instruction and Student Responding As a Function of Referral and Special Education Placement

Current practices of referral and placement in special education are based upon the premise that certain students have instructional needs that can be met better through special programming than through standard educational practices. Typically, once a student is referred, there is an extremely high probability that the student will be tested and placed (Algozzine, Christenson, & Ysseldyke, in press). It is thought that students who are referred, assessed, and declared eligible for special treatment will experience some significant change in their instructional programs.

Describing how students spend their time in classrooms is a necessary element in understanding factors that affect academic success or failure, one which should have important implications for assessment, decision making, and intervention with students, especially those students who reportedly display educational difficulties. Leonard (1981) suggested that time is a critical issue to consider in providing an appropriate education to all students as required by Public Law 94-142, and Bloom (1980) argued that time is an "alterable variable" available to all students. Previous observational research has demonstrated that the instructional ecology of a classroom differs for each student (Berliner, 1980; Good & Brophy, 1974) and that one variable of importance to academic achievement is amount of time spent by a student in active academic responding (Borg, 1980; Hall, Delquadri, Greenwood, & Thurston, 1982; Stallings, 1980).

How the referral-to-placement process affects instructional

ecology and active responding time for individual students has not been addressed in previous work. In an initial attempt to address this question, the Minnesota Institute for Research on Learning Disabilities (IRLD) followed four elementary school children from the time of their referral through IEP writing to two months following placement. Data were collected at three different times during the referral-to-placement process: (a) following referral but prior to the child study meeting, (b) one month following the IEP meeting, and (c) two months following the IEP meeting. Other IRLD studies have focused on observations of instructional ecology and student responding for large groups of regular education and learning disabled students with the goal of describing group similarities and differences (cf. Graden, Thurlow, & Ysseldyke, 1982; Graden, Thurlow, Ysseldyke, & Algozzine, 1982; Greener, Thurlow, Graden, & Ysseldyke, 1982; Thurlow, Graden, Greener, & Ysseldyke, 1982; Thurlow, Ysseldyke, & Graden, 1982; Thurlow, Ysseldyke, Graden, Greener, & Mecklenburg, 1982). The current study was an effort to ascertain the extent to which any changes in instruction or responding occurred for students involved in the referral process. The following questions guided this research effort:

1. To what extent are there changes in time allocated to various activities as a function of students going through the referral-to-placement process?

2. To what extent are there changes in time allocated to various tasks as a function of students going through the referral-to-placement process?

3. To what extent are there changes in time allocated to various teaching structures as a function of students going through the referral-to-placement process?

4. To what extent are there changes in time allocated to various teacher locations within the classroom as a function of students going through the referral-to-placement process?

5. To what extent are there changes in time allocated to various teacher activities as a function of students going through the referral-to-placement process?

6. To what extent are there changes in student time engaged in various responses as a function of students going through the referral-to-placement process?

7. To what extent are there changes in time allocated to academic versus non-academic activities as a function of students going through the referral-to-placement process?

8. To what extent are there changes in student time engaged in academic responding, task management, and inappropriate behaviors as a function of students going through the referral-to-placement process?

9. What is the extent of variability among individuals in the changes observed as a function of students going through the referral-to-placement process?

The above questions focus on allocated and engaged times as opposed to scheduled times. Allocated times were measured by direct observations of how much time actually was spent in various class activities, tasks, structures, teacher locations, and teacher activities. Engaged times were assessed by direct observation of time spent by each student making different kinds of responses. Engaged times that involved active, observable learning responses are referred to as active academic responding times. It has been demonstrated that engaged time is a stronger correlate of achievement than allocated time (Borg, 1980); further, it has been argued that a student must actually be engaged in practice (active academic responding) to learn (cf. Hall et al., 1982).

Method

Subjects

Four students from four classrooms in three elementary schools in a suburban school district served as subjects. The students had been referred by their teachers to their schools' child study teams for consideration for special education evaluations. Three of the students were males and one was female; they were in grades 1 (N=1), 2 (N=1), and 3 (N=2). All of the referring teachers were female.

All teachers and students were volunteer participants in the observational study. At the beginning of the school year, principals in 10 schools were informed of the study and asked to notify Institute researchers when a referral was submitted by a teacher who was willing to have observers in his or her class. It was planned that at least one student would be observed in each school. However, Institute researchers were notified of only eight cases in six schools. Consent forms were obtained from the teacher and for all students within these classes before observations were initiated. Observations were started in the eight classes; however, complete data were obtained for only four students. Data on the other four students were incomplete either because (a) the principal and teacher decided they did not wish the student to continue in the study (N=1), or (b) the school year ended before final observations could be completed within the predetermined schedule (N=3).

Observation System

The CISSAR (Code for Instructional Structure and Student Academic Response) observation system was used in this study. The version of

the system employed was developed by the Juniper Gardens Children's Project in Kansas City, Kansas (Greenwood, Delquadri, & Hall, 1978). The system focused the observation on the behavior of one target student (rather than sampling behaviors of several students) and allowed observers to record six event areas: (a) activity (12 codes), (b) task (8 codes), (c) teaching structure (3 codes), (d) teacher location (6 codes), (e) teacher activity (5 codes), and (f) student response (19 codes). Seventeen stop codes also were used to record reasons for termination of observation. Table 1 is a summary of the definitions of the event areas and the specific events recorded within each area. Detailed definitions and examples are presented in Appendix A. Excluding the stop codes, a total of 53 different events could be recorded with the CISSAR system.

Insert Table 1 about here

An interval time sampling technique was used to direct the recording of events. Three event areas were recorded every 10 seconds over the entire school day while the student was in the classroom. Coding was structured into blocks of seven 10-second intervals. During the first 10-second interval, activity, task, and teaching structure were recorded. During each of the next six 10-second intervals, teacher location, teacher activity, and student response were recorded. This pattern was maintained throughout the observation.

An auditory electronic timer attached to a clipboard was used to

signal the 10-second intervals. The timer was equipped with an earplug so that only the observer could hear the signal (a short beep sound). The clipboard was used to hold coding sheets and to provide a hard surface for marking events.

The coding sheets, modeled after those used by the Juniper Gardens Children's Project (Stanley & Greenwood, 1980), were designed at Minnesota's Institute so that they could be read automatically by an optical scanner (see Appendix B). To be read correctly by the scanner, the circles on the coding sheet had to be very dark and completely filled. In addition to spaces for coding student identification and start and stop times, each sheet contained three blocks representing 70 seconds each. Each completed sheet represented 3.5 minutes of observation time.

Observers

Eleven individuals served as observers. Eight of the observers were responsible for the majority of the observations. The other three observers were substitutes who filled in when the other observers' schedules were full, and in cases of sickness, make-up observations, and so on. These substitute observers were Institute staff members who conducted observer training sessions and monitored the regular observers. The regular observers were all females who had been selected from a pool of 50 female applicants who had responded to an ad in a local newspaper. A prerequisite for consideration was that the applicant not have a background in education; the goal was to minimize biases that might be brought to the classroom setting. Additional selection criteria included average or above average

reading ability and performance on selected parts of a general office skills test. A personal interview with one of two Institute staff members comprised the final step of selection.

Of the eight selected observers, three had attended college for at least one year, and one had a BA. Two others had completed a business or vocational school program. Previous employment varied greatly, including sales, clerical, foster parent, own business, and social worker. All but one observer had a child or children in elementary or secondary school. Observers did not work in schools in which their children were enrolled.

Procedures

Observer training. Training of observers in the observation system was accomplished through the use of an Observer and Trainer's Manual (Stanley & Greenwood, 1980). The manual presented eight units that, according to the authors, were sequenced in terms of the complexity of the recording skills covered. Training required observers to read materials and then practice coding small numbers of events through the use of a variety of other media, including flashcards, overheads, and videotapes. Exercises and quizzes were presented throughout the manual. Mastery (100% correct) of the material in each unit was required before continuing in the training to the next unit.

Training in the system was conducted by four Institute staff members. Two weeks of half-day training sessions were required to cover the material presented in the manual. This was followed by two to three days of practice coding within actual classrooms.

Data collection. The trained educational observers coded activities on either a whole-day (one observer all day) or half-day (one observer for morning, another for afternoon) basis. Typically, observers did not code continuously for a period of more than 1½ - 2 hours because of breaks within the school day. Observations were not conducted during breaks, such as lunch, recess, or bathroom. Also, observers did not code during physical education, music, or special assembly programs since the observation system did not apply to these situations. Observers did follow target students when they left their homerooms to go to other classrooms for certain subjects (typically reading and/or mathematics), or when they went to the LD teacher for special instruction. Coding was conducted in these other classrooms in the same manner as in homerooms. Regardless of the physical setting, observers attempted to position themselves to be unobtrusive and to avoid revealing the identity of target students to the target students themselves or to other students.

Use of the optical scanner coding sheets typically required observers to mark only slashes in the appropriate circles while observing because the 10-second interval did not provide enough time for circles to be darkened sufficiently to be read accurately by the optical scanner. As a result, observers darkened the slashed circles after the actual observation was completed, either during break periods, in the evenings, or on the weekends. This procedure tended to reduce errors in the coding of data.

Frequently, the coded observational data were supplemented with an anecdotal recording. Generally, anecdotal recordings were used to

provide a description of the classroom setting and anything unusual that may have occurred during observations. The observers were provided with guidelines for anecdotal recordings (see Appendix C) to help them determine when they were needed and what they should cover.

Each target student was observed for six full days by the observers. The first two days of data were collected before the child study team met to consider the referral. The next two days of data were collected approximately one month after an IEP had been written for the student. The last two days of data were collected approximately two months after the IEP had been specified. The decision to collect two days of data at each point in the assessment process was based on stability analyses presented by Greenwood, Delquadri, Stanley, Terry, and Hall (1981), in which they found one day of observation predicting 62% and 92% of the variance for activity and student response, respectively. Because of variability in the time taken to write IEPs for the observed students, the period within which the six observations were made varied from three months to nearly six months.

It was impossible to keep observers blind as to the type of students being observed. Similarly, teachers were aware of the identity of the students being observed since they were being observed as a result of the referral. Observers were instructed to note any behaviors that might indicate that the teacher's activities were being altered as a result of the observer's presence. No such changes were detected for the subjects in the present study.

Reliability. Reliability checks were conducted to detect any

inconsistencies in coding among observers or between an observer and the established code definitions. The reliability checks were conducted by another observer (designated the "reliability observer") who joined the observer in the classroom and coded events on the target student for approximately 14 minutes (4 pages of observation). During this study, 16 reliability checks were conducted.

Two types of reliability were checked: (a) behavioral, and (b) sequential. Behavioral reliability was a measure of observer agreement on a specific event being observed; behavioral reliabilities were calculated for (a) teacher position, (b) teacher activity, and (c) student response. The second type of reliability, sequential reliability, was a measure of observer agreement on a sequence of items; this measure was designed to document that observers were coding in the sequence required by the observation system. According to the CISSAR training manual, the desired levels of reliability were 90% for behavioral reliability and 85% for sequential reliability. Table 2 is a summary of the reliabilities obtained.

Insert Table 2 about here

To maintain adequate levels of reliability throughout the study, meetings were held to discuss coding problems, reliability disagreements, and so on. These were held on a weekly basis for the first two weeks of the study, and then on a biweekly basis after that. At the meetings, definitions were reviewed and any disagreements were resolved.

Achievement testing. The Peabody Individual Achievement Test (PIAT; Dunn & Markwardt, 1970) was administered by LD personnel within the school system to three of the students shortly after they were referred. Additionally, end-of-the-year PIAT scores were obtained by school personnel for two of these students.

Average Observed Times for LD and Non-LD Students

In previous work (Thurlow, Graden et al., 1982), observations were conducted on 17 LD and 17 non-LD students matched for sex and class. The mean times obtained in that study are presented here as a group-based framework within which to consider the data collected on the four referred students.

No significant differences were found between LD and non-LD students in time allocated to various activities. The activity allocated the largest portion of a school day was reading (63.2 min), followed by math (43.2 min), and language (27.9 min). Social studies (17.7 min), science (11.3 min), spelling (10.4 min), and arts/crafts (10.6 min) were the only other activities to occur for more than 10 minutes per day on the average.

The only significant difference between groups in time allocated to tasks was for other media (e.g., films, teaching games). LD students received more instruction using other media (46.0 min) than non-LD students (31.5 min). For both groups, time allocated to other media was second only to time allocated to readers (67.1 min). Workbooks (38.8 min), worksheets (28.6 min), and paper and pencil tasks (22.1 min) each occupied students for more than 20 minutes per day.

Although both groups spent the majority of their day in entire group structures, LD students were allocated significantly more time for individual structures (34.4 min) than non-LD students (3.0 min), while non-LD students were allocated significantly more time for entire group structures (166.4 min) than LD students (134.8 min).

LD students were allocated more time with the teacher beside them (19.8 min) than were non-LD students (2.6 min). Time allocated to other teacher locations did not differ for the two groups. Most time was spent among students (74.0 min), followed by in front of the class (43.0 min), and at the teacher's desk (37.8 min).

The majority of the student's day consisted of the teacher making no response to the target student (109.2 min). About one hour per day involved the teacher making teaching responses to the target student (61.9 min). The only statistical difference between groups was in the amount of approval received from the teacher (LD = 0.6 min; non-LD = 0.2 min).

Student responses showed the greatest number of significant differences between groups. Writing (LD = 22.4 min; non-LD = 30.1 min), playing academic games (LD = 3.4 min; non-LD = 1.0 min), reading aloud (LD = 3.7 min; non-LD = 0.7 min), talking academics (LD = 5.6 min; non-LD = 2.0 min), answering academic questions (LD = 2.1 min; non-LD = 0.7 min), and asking academic questions (LD = 1.1 min; non-LD = 0.4 min) all showed statistically significant differences between the two groups. With the exception of writing, these were all low rate behaviors, and the magnitude of the actual time differences is small. Both groups spent the greatest amount of time making passive

responses such as waiting and listening (75.2 min), followed by writing (26.2 min), looking around (15.3 min), and reading silently (10.6 min). All other student behaviors occurred less than 10 minutes per day on the average for both groups.

The data presented by Thurlow, Graden et al. (1982) provide a standard against which to compare the data from the four observed students. One hypothesis that may be proposed is that the times observed for students at the time of their referral to the child study team would be similar to those of the non-LD students, and then would become similar to those of the LD students after they began receiving special education services.

Results

Although the goal was to obtain data on 10 referred students, problems in obtaining subjects and completing all observations reduced the number of subjects with usable data to four. Therefore, findings are presented in a case-study format. This approach is advantageous in that it allows a focus on individual differences. Highlights of findings across cases also are provided.

Case 1

The first student observed was a third grade female, Jane (not her real name), who was described by observers as pleasant looking and somewhat shy. Jane consistently was seated in the back of the classroom and occasionally taunted by the boys sitting around her. According to anecdotal reports, she was "wiggly" but attentive. She appeared to work at assigned tasks, but with little accuracy. The initial reason for her referral was parental concern about her lack of

achievement in reading. The observational data for Jane are presented in Tables 3-8.

Insert Tables 3-8 about here

Time 1. During the two days of observation following referral but prior to action by the child study team, Jane's classroom environment was different in many respects from that of average LD and non-LD students. For Jane, the greatest portion of the school day (see Table 3) was allocated to instruction in mathematics (56 min), followed by language (33 min). No time was allocated to either reading or social studies during the two days of observation. The average time allocated to reading for LD and non-LD students was over one hour, and an average of 18 minutes was allocated to social studies. Of the time Jane was observed, about 78% was allocated to academic activities and 22% to non-academic activities; this is in contrast to the 85%/15% observed for both LD and non-LD students.

Jane spent most of her time working on worksheets (37 min), followed by readers (25 min), listening to lecture (26 min), and other media (26 min). This distribution of instructional tasks (see Table 4) represents quite a bit more listening to lecture than averages for LD and non-LD groups (4 min) and much less time allocated to the use of readers than for LD and non-LD groups (67 min).

The class structure for Jane (see Table 5) included less time in small group structures than the average for LD and non-LD students. No time was allocated to individual teaching structures for Jane

during the two days of observation. This is in sharp contrast to the half hour (34 min) of individual instruction allocated for LD students, but is similar to the small amount (3 min) allocated to individual structures for non-LD students.

Jane's teacher was in front of the class most of the day (75 min); this was almost twice the average time observed by Thurlow, Graden et al. (1982). Time allocated to other teacher locations in the room (see Table 6) was less than that observed in previous studies. The teacher was beside Jane for almost 8 minutes; this is below the 20 minutes that the teacher was beside an average LD student but over twice as much time as observed for the average non-LD student (3 min).

Jane received considerably less time of the teacher making no response to her (53 min) than the average LD or non-LD student (109 min). The teacher was teaching one hour per day (see Table 7), about the same as the norm. The 36 seconds of approval received by Jane was similar to the amount received by LD students (36 sec), an amount significantly above that received by non-LD students (12 sec). However, Jane also received almost 5 minutes of disapproval from her teacher over the course of an average day, an amount much greater than that received by either the LD students (1 min) or non-LD students (48 sec) observed by Thurlow, Graden et al. (1982).

In general, Jane's pattern of responding (see Table 8) was similar to the average. Most time was spent engaged in passive responses such as waiting and looking at the teacher (53 min), followed by looking around (17 min). Jane spent much less time

writing (13 min) and reading silently (1 min) than the LD (writing = 22 min; reading silently = 8 min) or non-LD students (writing = 30 min; reading silently = 3 min). Overall, Jane engaged in academic responses for 14.8% of the time she was observed; she was engaged in task management responses for 59.9% of this time, and in inappropriate responses for 25.3% of this time. The task management percentage for Jane corresponds to that observed for LD and non-LD students, but the academic response percentage is below the norm (26%) while the inappropriate response percentage is above the norm (17%).

Time 2. One month following the child study team meeting at which an IEP was written for Jane and she was placed in Level 3 LD services, some dramatic changes were observed in her program. Time allocated to reading increased from zero to 76 minutes per day (see Table 3). As a result, the percentage of observed time allocated to academic activities increased to 86%, a percentage similar to the norm (85%).

Several changes occurred in the times allocated to various tasks for Jane (see Table 4). Time spent listening to lectures decreased from 26 to 2 minutes; writing tasks, including workbook, worksheet, and paper and pencil, each increased by about 30 minutes per day.

Times allocated to various teaching structures also changed (see Table 5). Both small group and individual structures were used for greater amounts of time following the team meeting, with individual instruction increasing from no time to almost 92 minutes.

Teacher location changed as well (see Table 6). The teacher spent less than half as much time in front of the class, and greatly

increased the amount of time spent among the students in the classroom. The amount of time Jane spent with the teacher beside her increased from less than 10 minutes to almost 45 minutes.

Teacher activities directed to Jane changed also (see Table 7). Time allocated to both no response from the teacher and teaching increased. A notable drop occurred in the amount of other talk and disapproval directed to Jane.

Despite the several changes that occurred in Jane's instructional environment, few student responses changed appreciably following IEP writing (see Table 8). The amount of time Jane engaged in writing increased by about 20 minutes and the amount of time Jane engaged in passive responding increased by about 35 minutes. However, Jane increased the overall percentage of time she engaged in academic responses from 15% at time 1 to 31% at time 2, and decreased inappropriate responses from 25% at time 1 to 11% at time 2. The time 2 percentages are more in line with averages found for LD and non-LD students.

Time 3. Jane continued in Level 3 LD services throughout the year. The increase in time allocated to reading observed at time 2 was maintained two months following the writing of the IEP (see Table 3). In addition, social studies increased from zero minutes at times 1 and 2 to 12 minutes at time 3. Time allocated to business management and arts/crafts decreased to 1 minute per day. Overall, 94% of the observed time was allocated to academic activities.

Changes observed in time allocated to workbooks and listening to lecture from time 1 to time 2 were maintained (see Table 4). However,

worksheet and paper and pencil tasks reverted to pre-IEP times. Use of readers increased from time 2 to time 3 by almost 20 minutes.

Time allocated to small group structures decreased at time 3 to a level below that observed prior to the child study team meeting (see Table 5). Individual instruction time also decreased to about one hour, still considerably above that observed at time 1.

Two months after the IEP was written (time 3), the teacher's location in relation to Jane was largely the same as that observed one month earlier (see Table 6), with the exception that time spent among students decreased from 79 to 59 minutes a day, still greater than the time spent in this location prior to IEP writing (29 min). The amount of time the teacher spent beside Jane remained about the same as at time 2.

Changes also were noted in the teacher's activities (see Table 7). Decreased times were observed for the teacher making both no response and teaching responses, but both remained above pre-IEP levels.

Jane's responding times were very stable from time 2 to time 3 (see Table 8). Little change was observed in the percentage of observed time that Jane engaged in academic responses (30%); task management responses decreased some (from 58% to 55%) while inappropriate responses increased some (from 11% to 14%).

Achievement. Achievement data were obtained from Jane at time 1 and at the end of the school year (time between tests = 5½ mos). These data are presented in Table 9. Jane's raw score increased on all subtests except the General Information subtest. In terms of

standard scores, however, increases occurred only for reading recognition and reading comprehension.

Insert Table 9 about here

Summary. For Jane, the referral-to-placement process was accompanied by some changes in her academic environment. Most of these changes served to bring her typical day closer to the average times reported by Thurlow, Graden et al. (1982). Time allocated to reading and social studies increased after placement and was maintained at the two-month follow-up observation. Use of readers and workbooks increased while time spent listening to lectures decreased. Individual instruction increased across the three observations; the increase in small group instruction observed at one month following IEP writing had disappeared at the two-month observation. Decreases in the amount of time the teacher directed nonacademic talk and disapproval toward Jane were noted following the writing of the IEP. In light of these programmatic changes, some of which were very large in magnitude, the observed stability in the actual amounts of time Jane engaged in various student responses is surprising. The student responses that changed most were writing and passive responses, which both increased at times 2 and 3. Jane's classroom experience appeared to change as a function of the assessment-IEP process, with some corresponding changes in her academic responding time. Further, changes did occur in the percentage of observed time that Jane engaged in academic and inappropriate responses. Academic responses increased

at time 2 and were maintained at the higher level at time 3, while inappropriate responses decreased at time 2 and increased only slightly at time 3; task management responses remained relatively constant.

Case 2

The second student observed was a first grade male, Greg (not his real name). He was described in anecdotal reports as pleasant and on task, and as needing more teacher approval than peers. The classroom arrangement was traditional, with desks in rows at time 1 and in clusters at time 2. No reason for referral was specified for Greg. The observational data for Greg are presented in Tables 10-15.

Insert Tables 10-15 about here

Time 1. Prior to the child study team meeting, Greg's school day was composed almost entirely of reading (111 min), math (25 min), and handwriting (23 min). Only about 30 minutes of the observed day were allocated to other activities (see Table 10). Science, language, social studies, and spelling received no allocated time on the two days of observation. This picture differs from the average times observed for LD and non-LD students. (However, LD and non-LD students were third and fourth graders, while Greg was a first grader; this may account for some differences noted.) Specifically, Greg was allocated nearly twice as much time for reading as the average, but apparently at the expense of other activities that usually are allocated from 9 to 30 minutes of the day. Of the time Greg was observed, about 83% of

his day was allocated to academic activities and 17% to non-academic activities; these percentages are similar to those observed for both LD and non-LD students.

The tasks that occupied Greg for the greatest portion of the day (see Table 11) were worksheets (51 min) and other media (52 min), quite a bit more than the averages for LD or non-LD students (worksheets = 29 min, other media = 39 min). Greg's instruction involved use of a reader 20 minutes per day, considerably less than the average time for LD (58 min) and non-LD (76 min) students.

Greg received more instruction in a small group structure (92 min) than the average (45 min). In fact, entire group and small group structures were allocated equal times for Greg (see Table 12). About 9 minutes were allocated to individual structures; this amount of time was above that allocated for non-LD students (3 min), but considerably below that for LD students (34 min).

The teacher's location in the classroom reflected the averages (see Table 13), except that much less time was allocated to instructing from the teacher's desk (48 sec vs. 38 min). The 10 minutes that the teacher was beside Greg fell between that observed for LD (20 min) and non-LD students (3 min).

The teacher's activities also were similar to the average (see Table 14). Most time was spent teaching (79 min) followed by no response to the target student (70 min). The amount of both approval (2 min) and disapproval (2 min) received by Greg were above those observed for LD and non-LD students.

Greg's responses at time 1 (see Table 15) were close to the

averages for LD and non-LD students. The only exception was for silent reading, which was low at 1 minute compared with 8 minutes for LD students and 13 minutes for non-LD students. Overall, Greg engaged in academic responses for 23.9% of the time he was observed, a percentage similar to that of LD and non-LD students (26%). Task management responses comprised 58.0% of Greg's responding time, again comparable to the norm (56%). Similarly, the percentage of time Greg engaged in inappropriate responses (18.1%) was consistent with the norm (17%).

Thus, despite considerable deviations from the norm in time allocated to various class activities (due probably to his grade level), Greg's school day was much like the average with respect to task, structure, teacher location, teacher activity, and student responding times.

Time 2. At one month following the placement of Greg in Title I and speech/language services, time allocated to math increased from 25 to 42 minutes per day and language and social studies went from zero to 10 minutes (see Table 10). The amount of time allocated to reading remained at the same high level as at time 1.

Use of readers and other media increased considerably from time 1 to time 2 (see Table 11). Time allocated to workbooks decreased by over 10 minutes, and listen to lecture dropped from 10 minutes to no time.

Class structures were relatively stable from time 1 to time 2 (see Table 12). Teacher location in the classroom changed little, although the teacher did increase time spent among the students from

99 to 123 minutes (see Table 13). The number of minutes during which the teacher was making no response to Greg increased from 69 to 103 minutes (see Table 14). Teaching time increased also, from 79 to 93 minutes. Approval from the teacher decreased from 2.4 minutes to 54 seconds.

Greg's responding times remained relatively constant (see Table 15), except for the passive response category, which almost doubled (from 64 to 112 minutes). A decrease was noted in the amount of time Greg engaged in non-academic talk. Overall, the percentage of observed time that Greg engaged in active academic responses decreased from 23.9% to 14.8%; inappropriate responses decreased also, from 18.1% to 11.7%. On the other hand, the percentage of time that Greg engaged in task management responses increased from 58.0% to 73.4%.

In general, instructional changes from time 1 to time 2 were minor. Similarly, changes in Greg's responding times were few. Those that did occur resulted in increased task management time and decreased active academic responding time.

Time 3. Two months after Greg's placement was implemented, Greg's program included less time in handwriting (see Table 10), the addition of 5 minutes of science per day, and the return to zero time allocated to language. Overall, the percentages of observed time allocated to academic activities (80.2%) and non-academic activities (19.8%) were nearly identical to those observed at time 2.

Time allocated to various tasks generally returned to time 1 levels (see Table 11). Both the use of readers and other media decreased to near time 1 levels; time allocated to workbooks increased

almost to the time 1 level, as did time allocated to fetch and put away materials.

Changes in times allocated to various class structures (see Table 12) reflected an increase in small group time. Time allocated to individual structures fell from 10 minutes to no time.

The teacher spent fewer minutes in front of the class (see Table 13) and at Greg's side at time 3 than at time 2. Time spent in the back of the class increased from 3 minutes to 24 minutes. The teacher was teaching fewer minutes per day at this observation than at either of the others (see Table 14), averaging less than one hour per day.

Again, with the exception of decreases in the amount of time Greg engaged in passive responding (see Table 15), and an increase in non-academic talk, Greg's responding times did not change appreciably. Only a small change occurred in the percentage of time Greg engaged in inappropriate responses; this change reflected an increase from 11.7% at time 2 to 17.3% at time 3, which was very close to the time 1 percentage (18.1%). The increase in inappropriate responding was countered by a decrease in task management responses from time 2 (73.4%) to time 3 (69.6%) and a slight decrease in active academic responding from time 2 (14.8%) to time 3 (13.0%).

Achievement. Achievement data were not obtained for Greg at both time 1 and the end of the school year. Thus, changes in achievement could not be assessed.

Summary. Although some minor changes in class structure were observed, the most pronounced characteristic of Greg's case was the relatively few observed changes, even though Title I services and

speech/language services were initiated. His behavior was quite stable throughout the time period considered, and those changes that did occur usually were decreases in academic responses and increases in either task management or inappropriate responses. Further, many of the changes in times reflected the fact that Greg was observed for a greater period of time at time 2 because of fewer breaks and/or special classes (music, physical education) and special assemblies. Some minor differences were noted between Greg's program and the norm, a finding that might be expected since Greg was in the first grade while the LD and non-LD students were third and fourth graders. Despite this, Greg's behavior at each point was quite consistent with that displayed by the LD and non-LD students.

Case 3

Jim (not his real name) was a third grader who was described by observers as well liked by peers, pleasant, and a good worker under the right conditions. Jim's homeroom was reported to be very disorganized, with the teacher having little control. The cited reasons for his referral were deficits in math and reading, especially reading comprehension. The observational data for Jim are presented in Tables 16-21.

Insert Tables 16-21 about here

Time 1. Prior to the child study team meeting, Jim's school day consisted of 61 minutes of reading, 23 minutes of math, and 25 minutes of spelling (see Table 16). Nearly 22 minutes per day were allocated

to business management, compared to an average of about 6 minutes for LD and non-LD students (Thurlow, Graden et al., 1982). Handwriting, science, and social studies received no time, and language was allocated considerably less than the average (4 min vs. 27 min). Overall, 70.4% of the observed day was allocated to academic activities (compared to 85% for the norm), while 29.6% was allocated to non-academic activities (compared to 15% for the norm).

Time allocated to various instructional tasks used with Jim also differed from that for LD and non-LD students (see Table 17). More time was allocated to worksheets (43 min vs. 28 min) and less to other media (21 min vs. 38 min) than average. Jim also used readers much less than students in previous studies (18 min vs 66 min).

Jim received most of his instruction in an entire group structure (123 min), followed by small group (38 min), with no time spent in individual instruction (see Table 18). This pattern is similar to that for non-LD students, but differs from that for LD students, who received an average of 34 minutes per day in individual structures.

With the exception of the small amount of time the teacher was among students (29 min vs 73 min), the teacher's location in the classroom (see Table 19) was similar to averages for LD and non-LD students, with most time spent in front of the class (56 min), followed by at the teacher's desk (33 min). The time the teacher spent beside Jim (2.2 min) was comparable to that observed for non-LD students (2.6 min), but much less than that observed for LD students (19.8 min).

Jim's teacher directed non-academic talk toward him (see Table

20) for more minutes of the day than average (21 min vs 5 min). She made no response to Jim for 58 minutes and taught for 49 minutes per day, both less than average (109 minutes of no response and 61 minutes of teaching toward LD and non-LD students). The teacher directed disapproval toward Jim for over 4 minutes per day, a level much above that observed for either LD (1.2 min) or non-LD students (48 sec).

Jim's responding times were similar in most respects to the averages for LD and non-LD students (see Table 21). He read silently somewhat less than the norm (1 min vs 10 min) and engaged in passive responses for about one half hour less per day than the average (51 min vs 75 min). Overall, Jim engaged in academic responses for 25.8% of the observed day, a level comparable to the norm (26%). The 23.0% level of inappropriate responding was above that observed for other students (17%), while the 51.2% level of task management was below that observed for other students (60%).

Time 2. One month following implementation of an IEP for Jim and his placement in Level 3 LD services, time allocated to spelling was reduced from 25 to 9 minutes (see Table 16); language instruction increased from 4 to 27 minutes per day, and science (12 min) and social studies (19 min) were allocated time during the days he was observed. Academic activities made up 85.6% of the observed day (up from 70.4%) while non-academic activities made up 14.4% (down from 29.6%). These percentages are very close to those observed for LD and non-LD students.

Changes also occurred in time allocated to various tasks (see Table 17). Use of readers expanded from 18 to 42 minutes per day and

use of other media increased from 21 to 53 minutes, bringing tasks used in his instructional program closer to the norm.

Individual instruction time was added to Jim's day at time 2 (9 min). The time allocated to other structures (see Table 18) remained relatively constant. Teacher location (see Table 19) and teacher activities (see Table 20) also changed somewhat. The teacher spent one hour more per day among the students (29 to 86 min), while decreasing time spent at the teacher's desk (56 to 34 min). The teacher spent less time in other talk (21 to 4 min) and more time teaching (49 to 60 min) and making no response (58 to 100 min). Disapproval time dropped greatly (4.4 to 0.9 min).

Jim's responding times were basically stable from time 1 to time 2. The only category that changed more than 10 minutes per day, passive responding, increased from 51 to 78 minutes. The percentages of time in which Jim engaged in academic (22.4%), task management (59.3%), and inappropriate responses (18.3%) also were relatively unchanged.

Time 3. Two months following implementation of Jim's IEP and his Level 3 LD placement, times allocated to various activities had reverted to pre-IEP levels for all categories except math, which was allocated 16 minutes more per day (see Table 16) and business management, which decreased from 21 to 7 minutes. Overall percentages remained unchanged also, with academic activities allocated 86.3% of the observed day and non-academic activities allocated 15.9%.

Use of readers went back down to the pre-IEP level (see Table 17) and use of other media decreased from 53 to 36 minutes. Worksheet

use, which was stable across the first two observations, decreased from 43 to 24 minutes daily, while workbooks were used more (20 to 44 min).

Changes occurred in time allocated to various teaching structures (see Table 18). Instruction within the entire group decreased (156 to 106 min) and Jim received more time in an individual structure (8 to 29 min).

The teacher spent considerably less time in front of the class at time 3 (see Table 19). Time spent among students decreased from time 2 (86 min) to time 3 (67 min), but was still much greater than the pre-IEP level (30 min). Time spent beside Jim increased even further, from 5 minutes at time 2 to 10 minutes at time 3.

Teacher activities were stable except that time spent teaching decreased to a level below that of time 1 (see Table 20). Approval from the teacher increased somewhat, but was still less than 1 minute per day. Further, disapproval increased from time 2 (54 sec) to time 3 (1.5 min), but was still less than half the disapproval observed at time 1 (4.4 min).

Changes in Jim's responding times generally reflected a return to pre-IEP levels (see Table 21). Although decreases were observed in most active academic responding times, silent reading, academic talk, and asking academic questions did increase somewhat. Similarly, while most inappropriate responses increased, non-academic talk and looking around decreased. The largest change that occurred in Jim's responding times was in passive responding, which dropped. Overall, at time 3, 25.0% of Jim's responses were academic, 50.2% were task

management, and 24.8% were inappropriate. These percentages are very close to those observed at time 1.

Achievement. Achievement data were obtained from Jim at time 1 and at the end of the school year (time between tests = 5 mos). These data are presented in Table 22. Jim's raw score increased on all subtests. These increases were reflected in increased standard scores for all except the General Information subtest.

Insert Table 22 about here

Summary. For Jim the referral-to-placement process seems to have resulted in several short-term changes in the daily program. However, most of these changes were absent two months following implementation of the IEP; his responding times as coded by CISSAR were basically unaffected by the program changes. He began and remained within a few minutes of average for almost all categories of student responding. Further, the percentage of time he engaged in academic responses decreased at time 2 and did not quite return to the time 1 level two months after the IEP had been written. However, across the three sets of observations, time spent reading silently showed a steady increase, a change that may relate to some of the observed increases in achievement.

Case 4

Bob (not his real name) was a second grade student in a school that was structurally more open then the others in which students were observed. He was described by observers as needing somewhat more

attention than other students, and as having the social skills to get such attention without disrupting class. The cited reason for referral was that Bob was low academically in math and reading. The teacher indicated that she did not feel the student could learn in the reading curriculum used by the school. The observational data for Bob are presented in Tables 23-28.

Insert Tables 23-28 about here

Time 1. Prior to the child study meeting, Bob's day was dominated by reading (113 min), which was allocated almost twice as much time as the average for LD and non-LD students (63 min). (Again, observed LD and non-LD students were third and fourth graders while Bob was a second grader; this difference in grades may account for some noted differences). The activity allocated the next greatest amount of time (see Table 23) was social studies (17 min). Math occupied 10 minutes, considerably lower than the norm (42 min), and language, which averaged 26 minutes a day for LD and non-LD students, was not allocated any time during the time 1 observations.

Instructional tasks also were distributed somewhat differently than the norm for Bob (see Table 24). The task used for the greatest portion of the day was worksheets (54 min). This task occupied twice as much time as the average for LD and non-LD students. Other media followed at a level comparable to the norm. Readers, workbooks, and paper and pencil tasks were used less often than average (readers: 22 min vs. 66 min; workbooks: 6 min vs 27 min; paper and pencil: 5 min

vs 22 min).

Bob's class structure (see Table 25) included more small group and less entire group time than observed for LD and non-LD students. In fact, more of the day was spent in a small group structure (98 min) than in an entire group structure (82 min).

The teacher's location in the classroom (see Table 26) was very similar to the norm. Most time was spent among the students (99 min), followed by in front of the class (39 min). The teacher was beside Bob for 3.8 minutes per day, a level comparable to that for non-LD students (2.6 min).

Teacher activities (see Table 27) also were similar to previously observed averages. The teacher made no direct response to Bob for 75 minutes of the day and made specific teaching responses for 71 minutes. Both approval and disapproval from the teacher occurred relatively infrequently.

Times for all categories of student response (see Table 28) were within 10 minutes of LD and non-LD averages, except writing, which was low (12 min vs 26 min), and passive responding, which was also low (58 min vs 75 min). Despite these two deviations in actual times, the 22.6% academic responses, 61.4% task management responses, and 16.0% inappropriate responses were quite similar to the normative percentages.

Time 2. One month following implementation of an IEP for Bob and his placement in Level 3 LD services, several changes in daily activity had occurred (see Table 23). Reading time decreased drastically from 113 to 24 minutes per day, and spelling, which had

received 13 minutes at time 1, was now allocated no time. Math instruction increased from 10 to 25 minutes per day and language went from zero to 18 minutes. Other increased times included free time (0 to 22 min), business management (1 to 14 min), and transition (3 to 17 min).

Several changes also occurred in times allocated to various tasks (see Table 24). Use of readers and workbooks dropped even lower relative to norms (readers: 22 to 7 min; workbooks: 6 to 0 min), while other media and paper and pencil tasks occupied more time (other media: 43 to 64 min; paper and pencil: 5 to 16 min). Use of worksheets dropped below other media as the predominant task.

At time 2, individual instruction increased for Bob (see Table 25). However, about 70 minutes of the day that had been spent in small group structures were now spent in an entire group structure (small group: 98 to 29 min; entire group: 82 to 138 min).

Teacher location in the classroom remained basically unchanged (see Table 26). Teacher activities (see Table 27) included more minutes of no response to Bob than before (78 to 96 min) and less time teaching (71 to 37 min). Time spent in other talk, approval, and disapproval increased as well.

Bob's responding times were very stable, with few categories changing by more than 5 minutes (see Table 28). Writing was down by about 5 minutes (12 to 7 min), reading silently decreased to almost zero (6 to 0.6 min), talk academic occurred less frequently (7 to 1 min), and passive responding increased (58 to 65 min). The magnitude of these changes was small. In terms of percentages, however, task

management responses increased from 61.4% to 71.4%, while active academic responding decreased from 22.6% to 8.8%.

Time 3. Two months after his placement in Level 3 LD services and the writing of the IEP, time allocated to reading for Bob increased by almost one hour per day, still below pre-IEP levels (see Table 23), but above the average for LD and non-LD students. Language time reverted to zero, and social studies and free time disappeared as well. Overall, academic activities were allocated 87.6% of the observed day, a level very close to the average observed for LD and non-LD students.

Use of readers decreased even more, to 4 minutes, and paper and pencil tasks returned to near time 1 levels (see Table 24). Use of other media remained highest, even though worksheets regained some daily time. During this observation, one hour less per day was spent in the entire group (see Table 25). Time allocated to individual instruction increased by over 30 minutes to 43 minutes, an amount above that observed for LD students observed previously.

Teacher location changed also (see Table 26). Time spent in front and among students decreased (in front: 25 to 8 min, among students: 105 to 57 min), while time spent at desk and out of the room increased (at desk: 6 to 30 min, out: 0 to 15 min). Time spent beside Bob continued to increase to 9.4 minutes at time 3, but was still below the average observed for the LD students (19.8 min).

Teacher activity remained quite stable (see Table 27), with a small decrease in no response (96 to 85 min). Approval time decreased from 1.3 minutes to 18 seconds; disapproval time decreased also (1.9

min to 54 sec).

All but two academic responses (academic games and academic talk) increased from time 2 to time 3. Further, all task management and inappropriate responses decreased from time 2 to time 3. However, Bob's responding times changed by less than 5 minutes from time 1 to time 3 in every category except talk academic and look for materials (see Table 28). Bob engaged in active academic responses for 21.0% of the time he was observed, up from the 8.8% at time 2, but still below the 22.6% at time 1. Task management responses (64.9%) fell from 71.4% at time 2 to a level just above that at time 1 (61.4%), and inappropriate responses at time 3 (14.1%) fell from 19.9% to a level below that at time 1 (16.0%).

Achievement. Achievement data were not obtained for Bob at both time 1 and at the end of the school year. Thus, changes in achievement could not be assessed.

Summary. The referral-to-placement process for Bob resulted in several short-term changes in his academic program, most of which disappeared by the time observations were made two months following the development of the IEP. His responses remained stable across time, with the small changes that had appeared at time 2 reverting to pre-IEP levels by time 3. Some of the stable differences between Bob's school day and previous norms may be consequences of the open school format in which he was placed.

Highlights of Findings Across Cases

Examination of the observed times for the four referred students on those variables for which significant differences were found

between LD and non-LD students in the same school district reveals the inconsistent effects of the referral-to-placement process. Figure 1 is a graphic representation of the times allocated to individual structures for the four referred students. The amount of time allocated to individual structures increased dramatically from time 1 to time 2 for Jane and moderately for Jim and Bob, but almost not at all for Greg. Two students were allocated less individual structure time at time 3 compared to time 2, while two other students were allocated more time. For three of the four students, time allocated to individual structures two months after the IEP had been written was similar to that of previously observed LD students, but for one student individual structure time was below that observed for non-LD students.

Insert Figure 1 about here

Figure 2 is a display of times allocated to entire group structures. The lines depicting changes in allocated time were fairly parallel for three of the students. In contrast, the time allocated to entire group structures for Jane first decreased but then increased again. Few of the points in the figure reflected the average times observed for either LD or non-LD students.

Insert Figure 2 about here

Times allocated to other media tasks are presented in Figure 3.

Again, the variability among students is present even though the trends in time changes are similar. There was no relationship among the times allocated to other media tasks at various points in the referral process and the average times allocated to other media tasks for LD and non-LD students.

Insert Figure 3 about here

Similar examples of variability among students and inconsistent changes across the referral-to-placement process were observed for the other variables on which LD and non-LD students were found to differ significantly. An example of the variability and inconsistency found for student responses is presented in Figure 4. For the active academic response of writing, all students except Jim started out at levels lower than those observed for both LD and non-LD students. Only one student, Jane, approached those levels by two months after the IEP had been written. Across time, two students showed increases in the amount of time engaged in writing and two students showed decreases.

Insert Figure 4 about here

Another variable of interest is the time allocated to reading. Almost exclusively, the reasons the students were referred were related to reading problems. Figure 5 is a display of times allocated to reading activities. The extreme variability in allocated times is

noteworthy for something as basic as reading.

Insert Figure 5 about here

Figure 6 is a depiction of the amounts of time students engaged in passive responding as a function of the referral process. In all cases, the amount of time increased from time 1 to time 2 and then decreased at time 3. In general, it appeared that whenever a student could be observed for a greater amount of time, most of the additional time was devoted to passive responding.

Insert Figure 6 about here

Discussion

The four students who were observed in the present study all proceeded through the referral-to-placement process during the same year in the same school district. All referred students were tested and subsequently placed in some type of services, consistent with previous national findings that a referral typically leads to testing and placement (Algozzine et al., in press). Three of the four students received Level 3 LD services while the other was provided Title I and speech/language services. Yet, the time allocated to instruction and the time engaged in academic responding for these students rarely exhibited consistent trends. This was true even for the two students within the same school (Jane and Greg) and the two students at the same grade level (Jane and Jim). Further, the

hypothesis that the times observed for students at the time of their referral would be similar to those of non-LD students observed previously and then would become similar to those of LD students as they began receiving special education services was not supported.

An examination of the figures depicting changes across the students reveals that despite the observed individual differences, some limited generalizations can be made. First, in many instances, change that was observed from the period prior to the child team study meeting (time 1) to one month following the writing of the IEP (time 2) often disappeared by the time of observation at two months following writing of the IEP (time 3). This trend can be seen in the triangular shape of many of the graphs.

Second, in most cases, the lines defining change for the observed students intersected with those defining averages for LD and non-LD students. This suggests that the school day for these four students was not greatly different from group norms. In those cases where averages and observed times did not intersect, the difference was between averages for non-LD students and the observed students (no response by teacher, readers, silent reading, entire group structure, teacher at desk), indicating that this sample was more similar to a group of LD students than to non-LD students. This is not an unexpected finding given that three of the four students received LD placements.

Third, while change was observed in several aspects of the students' classroom experience, these changes generally were not reflected in changes in the students' responding times. Although the

referral-to-placement process may serve to alter some aspects of the daily routine, things seem to resettle with time into patterns remarkably similar to those observed prior to intervention. Perhaps of greatest importance is the finding that, for most students, those changes that are made are not effective in bringing about persistent changes in student responding, including active academic engaged time.

The study presented here is limited by the sample size and the absence of any assessment of quality of time. For example, no assessment was made of the appropriateness or difficulty level of work completed by the student. However, we can propose on the basis of our evidence that current practice in the referral-to-placement procedure does not appear to effectively change engaged time for some students, despite changes observed in classroom instructional ecology. Future work with larger samples should address methods of effecting change in engaged time for both regular class and special class students. Since it has been demonstrated that academic engaged time is related to achievement (Greenwood, et al., 1981; Hall et al., 1982) and can be manipulated by changes made in classroom structure and procedure (Bergan & Schnaps, undated), it is worthy of consideration in the assessment and intervention planning for LD students.

Finally, although this study is limited by the small sample size, the lack of any persistent, positive increase in student academic engaged time as a function of special placement raises the question of what benefits, if any, students accrue from special services placement. Current practices, which lead to nearly automatic testing and placement when a student is referred, may need to be re-examined

in light of these preliminary findings which suggest that special services do not necessarily lead to positive increases in academic responding time, a variable that is highly related to achievement. A more useful educational direction than current referral-to-placement practices would be to focus on a referral-to-intervention paradigm, with intervention efforts aimed at methods of increasing student academic responding time both in regular and special education classrooms. Such a focus on increasing time spent engaged in learning is seen as a positive direction in both research and practice, as time spent learning is a variable that can be altered by teachers (Bloom, 1980), is a resource available to all students, relates positively to achievement (Borg, 1980), and can be a focus of intervention programs (Bergan & Schnaps, in press; Muir, 1980; Noli, 1980).

References

Algozzine, B., Christenson, S., & Ysseldyke, J. E. Probabilities associated with the referral-to placement process. Teacher Education and Special Education, in press.

Berliner, D. Using research on teaching for the improvement of classroom practice. Theory into Practice, 1980, 19, 302-308.

Bergan, J. R., & Schnaps, A. A model for instructional consultation. In J. L. Alpert & J. Meyers (Eds.), Training in consultation. Springfield, IL: Charles Thomas, in press.

Bloom, B. The new direction in educational research: Alterable variables. Phi Delta Kappan, 1980, 61, 382-385.

Borg, W. Time and school learning. In C. Denham & A. Lieberman (Eds.), Time to learn. Washington, D. C.: National Institute of Education, 1980.

Dunn, L. M., & Markwardt, F. C. Peabody individual achievement test. Circle Pines, MN: American Guidance Service, 1970.

Good, T., & Brophy, J. Teacher-student relations: Causes and consequences. New York: Holt & Rinehart, 1974.

Graden, J., Thurlow, M. L., & Ysseldyke, J. E. Instructional ecology and academic responding time for students at three levels of teacher-perceived behavioral competence (Research Report No. 73). Minneapolis: University of Minnesota, Institute for Research on Learning Disabilities, 1982.

Graden, J. L., Thurlow, M. L., Ysseldyke, J. E., & Algozzine, B. Instructional ecology and academic responding time for students in different reading groups (Research Report No. 79). Minneapolis: University of Minnesota, Institute for Research on Learning Disabilities, 1982.

Greener, J. W., Thurlow, M. L., Graden, J. L., & Ysseldyke, J. E. The educational environment and students' responding times as a function of students' teacher-perceived academic competence (Research Report No. 86). Minneapolis: University of Minnesota, Institute for Research on Learning Disabilities, 1982.

Greenwood, C. R., Delquadri, J., & Hall, R. V. Code for instructional structure and student academic response: CISSAR. Kansas City, KS: Juniper Gardens Children's Project, Bureau of Child Research, University of Kansas, 1978.

Greenwood, C., Delquadri, J., Stanley, S., Terry, B., & Hall, R. Process-product study of relationships among instructional ecology, student response, and academic achievement. Unpublished manuscript, Juniper Gardens Children's Project, 1981.

Hall, R. V., Delquadri, J., Greenwood, C. R., & Thurston, L. The importance of opportunity to respond in children's academic success. In E. B. Edgar, N. G. Haring, J. R. Jenkins, & C. G. Pions (Eds.), Mentally handicapped children: Education and training. Baltimore: University Park Press, 1982.

Leonard, J. 180 day barrier: Issues and concerns. Exceptional Children, 1981, 47, 246-253.

Muir, R. A teacher implements instructional changes using the BTES framework. In C. Denham & A. Lieberman (Eds.), Time to learn. Washington, D.C.: National Institute of Education, 1980.

Noli, P. A principal implements BTES. In C. Denham & A. Lieberman (Eds.), Time to learn. Washington, D.C.: National Institute of Education, 1980.

Stallings, J. Allocated academic time revisited, or beyond time on task. Educational Researcher, 1980, 9, 11-16.

Stanley, S. O., & Greenwood, C. R. CISSAR: Code for instructional structure and student academic response: Observer's manual. Kansas City, KS: Juniper Gardens Children's Project, Bureau of Child Research, University of Kansas, 1980.

Thurlow, M. L., Graden, J., Greener, J. W., & Ysseldyke, J. E. Academic responding time for LD and non-LD students (Research Report No. 72). Minneapolis: University of Minnesota, Institute for Research on Learning Disabilities, 1982.

Thurlow, M. L., Ysseldyke, J. E., & Graden, J. L. LD students' active academic responding in regular and resource classrooms (Research Report No. 90). Minneapolis: University of Minnesota, Institute for Research on Learning Disabilities, 1982.

Thurlow, M. L., Ysseldyke, J. E., Graden, J., Greener, J. W., & Mecklenburg, C. Academic responding time for LD students receiving different levels of special education services (Research Report No. 78). Minneapolis: University of Minnesota, Institute for Research on Learning Disabilities, 1982.

Footnote

The observational research reported here was part of an extensive project that could not have been completed without the cooperation and help of numerous individuals. Foremost among these were the administrators, teachers, and students in the school district in which the research was conducted. Equally important to the successful completion of the research were the observers; listed alphabetically, they were: Barbara Flykt, Eileen Mevissen, Donna Miller, Rose Marie Plant, Cheryl Randklev, Judith Rygwall, Yvonne Shafranski, Wendy Studer, and Geraldine Webster. In addition, the assistance of Sandra Christenson during observer training and Jean Greener for coordination of observations is gratefully acknowledged. The special assistance of Charles Greenwood and Sandra Stanley, University of Kansas, in the implementation of their CISSAR observational system was appreciated greatly, as was the data analysis expertise provided by Matthew McGue and Jing Jen Wang. Also essential to the completion of the project were the contributions of psychometric assistants Barbara Anderson, Lisa Boyum, Yetta Levine, and Cathy Walters. Further, the excellent secretarial services provided by Audrey Thurlow and Marilyn Hyatt made the entire research process a success.

Table 1

CISSAR Event Areas and Specific Events Coded[a]

Event Area	Specific Events Coded
Activity - type of instruction being provided/established by teacher	R - Reading M - Math S - Spelling H - Handwriting L - Language Sc - Science Ss - Social Studies Ac - Arts/Crafts Ft - Free Time Bm - Class Business/ Management Tn - Transition Ct Can't Tell
Task - curriculum task or verbal instruction mode in which student is expected to engage	Rr - Readers Wb - Workbooks Ws - Worksheets Pp - Paper and Pencil Ll - Listen to Teacher Lecture Om - Other Media Tsd - Teacher-Student Discussion Fp - Fetch/Put Away
Teaching Structure - physical arrangement of stucent in class	Eg - Entire group Sg - Small group I - Individual
Teacher Position - location of teacher	IF - In Front of Class AD - At Desk AS - Among Students O - Out of Room S - Side B - Back
Teacher Activity - response of teacher to target student	NR - No Response T - Teaching OT - Other Talk A - Approval D - Disapproval
Student Response - behavior in which student is engaged	W - Writing G - Playing Academic Game RA - Reading Aloud RS - Silent Reading TA - Talking About Academics ANQ - Answers Academic Question ASK - Asks Academic Question AT - Passive Response RH - Raising Hand LM - Looking for Materials M - Moves to New Academic Station PA - Play Appropriate DI - Disruption PI - Play Inappropriate IT - Inappropriate Task TNA - Talking About Non-academics IL - Inappropriate Locale LA - Look Around SST - Self-Stimulation

[a]Based on Stanley & Greenwood's (1980) CISSAR: Code for instructional structure and student academic response: Observer's manual. Within the Student Response Event Area, the AT event, which was designated as "Attending" by Stanley and Greenwood, was renamed as "Passive Response" in the present investigation to avoid inappropriate connotations of the responses included within that event.

Table 2

Summary of Reliabilities Calculated During the Study[a]

Reliability	Mean	Range
Behavioral		
Teacher Location	90.3	58-100
Teacher Behavior	92.8	82-100
Student Response	87.0	65-100
Sequential	91.4	74-99

[a]All reliabilities are expressed as percentages.

Table 3

Time Allocated to Activities for Jane at Three Points in the Referral-to-Placement Process[a]

Activity	Time 1	Time 2	Time 3
Academic	119.9	201.0	186.7
Reading	0.0	75.9	67.6
Math	56.0	56.0	43.8
Spelling	16.5	9.5	7.7
Handwriting	6.0	18.2	18.2
Language	33.3	32.6	37.8
Science	8.1	8.8	0.0
Social Studies	0.0	0.0	11.6
Non-Academic	33.4	32.0	12.7
Arts/Crafts	13.0	18.6	1.1
Free Time	1.1	0.7	0.0
Business Management	10.5	4.6	1.8
Transition	8.8	8.1	9.8

[a]Entries are the average number of minutes for one day, based on two days of observation.

Table 4

Time Allocated to Tasks for Jane at Three Points in the Referral-to-Placement Process[a]

Task	Time 1	Time 2	Time 3
Readers	25.2	29.8	47.3
Workbooks	15.8	48.0	58.8
Worksheets	36.8	60.2	33.3
Paper & Pencil	5.3	36.1	6.0
Listen to Lecture	26.3	2.5	0.0
Other Media	26.3	37.5	26.3
Teacher-Student Discussion	6.3	11.6	16.5
Fetch & Put Away	11.2	13.3	11.2

[a]Entries are the average number of minutes for one day, based on two days of observation.

Table 5

Time Allocated to Teaching Structures for Jane at Three Points in the Referral-to-Placement Process[a]

Structure	Time 1	Time 2	Time 3
Entire Group	147.0	121.8	131.3
Small Group	6.0	24.5	4.2
Individual	0.0	91.7	64.1

[a]Entries are the average number of minutes for one day, based on two days of observation.

Table 6

Time Allocated to Teacher Locations for Jane at Three Points in the Referral-to-Placement Process[a]

Teacher Location	Time 1	Time 2	Time 3
In Front	72.3	35.1	30.6
At Desk	10.5	34.2	16.2
Among Students	29.9	79.1	59.4
Beside Student	7.7	41.2	38.6
Back	0.9	8.4	8.2
Out	1.7	2.8	13.7

[a]Entries are the average number of minutes for one day, based on two days of observation.

Table 7

Time Allocated to Teacher Activities for Jane at Three Points in the Referral-to-Placement Process[a]

Teacher Activity	Time 1	Time 2	Time 3
No Response	53.1	103.9	91.2
Teaching	60.3	93.7	71.4
Other Talk	7.4	1.2	2.7
Approval	0.6	0.4	0.3
Disapproval	4.6	1.4	1.0

[a]Entries are the average number of minutes for one day, based on two days of observation.

Table 8

Time Jane Engaged in Various Responses at Three Points in the Referral-to-Placement Process[a]

Student Response	Time 1	Time 2	Time 3
Academic	18.6	61.1	50.2
Writing	13.2	32.5	27.4
Acad Game	0.5	7.5	3.4
Read Aloud	0.3	3.9	3.2
Read Silently	1.1	3.9	7.7
Talk Acad	1.5	4.6	5.4
Ask Acad Q	1.4	6.4	2.7
Ans Acad Q	0.6	2.3	0.4
Task Management	75.5	114.0	91.6
Passive Response	53.8	87.5	73.6
Raise Hand	3.8	1.8	1.5
Look for Mats	8.1	6.2	8.4
Move	3.6	3.8	3.9
Play Appr	6.2	14.7	4.2
Inappropriate	31.9	21.3	23.8
Disruption	0.4	0.0	0.0
Play Innapr	8.4	7.6	3.5
Innapr Task	3.9	2.8	0.0
Talk Non-Acad	1.2	2.7	1.8
Inappr Locale	0.8	0.0	0.0
Look Around	17.2	8.0	18.4
Self-Stimulation	0.0	0.2	0.1

[a]Entries are the average number of minutes for one day, based on two days of observation.

Table 9

PIAT Data for Jane

Subtest	Raw Score		Standard Score	
	Time 1	Time 2	Time 1	Time 2
Mathematics	30	31	97	91
Reading Recognition	29	36	98	100
Reading Comprehension	22	31	88	95
Spelling	28	30	95	91
General Information	26	18	104	89
Total	135	146	96	92

Table 10

Time Allocated to Activities for Greg at Three Points in the Referral-to-Placement Process[a]

Activity	Time 1	Time 2	Time 3
Academic	160.0	197.4	153.1
Reading	111.3	109.2	99.8
Math	25.2	42.7	33.3
Spelling	0.0	0.0	0.0
Handwriting	23.5	25.2	7.0
Language	0.0	9.8	0.0
Science	0.0	0.0	5.3
Social Studies	0.0	10.5	7.7
Non-Academic	32.6	47.7	37.8
Arts/Crafts	16.8	37.5	28.0
Free Time	0.0	0.0	0.0
Business Management	4.2	6.0	3.5
Transition	11.6	4.2	6.3

[a]Entries are the average number of minutes for one day, based on two days of observation.

Table 11

Time Allocated to Tasks for Greg at Three Points in the Referral-to-Placement Process[a]

Task	Time 1	Time 2	Time 3
Readers	20.3	61.3	33.3
Workbooks	29.1	16.8	25.2
Worksheets	51.5	49.7	51.8
Paper & Pencil	11.6	16.8	15.1
Listen to Lecture	10.5	0.0	4.2
Other Media	52.5	84.7	42.7
Teacher-Student Discussion	3.5	8.8	6.0
Fetch & Put Away	14.0	6.3	13.0

[a]Entries are the average number of minutes for one day, based on two days of observation.

Table 12

Time Allocated to Teaching Structures for Greg at Three Points in the Referral-to-Placement Process[a]

Structure	Time 1	Time 2	Time 3
Entire Group	91.7	136.5	89.3
Small Group	92.8	97.3	101.5
Individual	8.8	10.5	0.0

[a]Entries are the average number of minutes for one day, based on two days of observation.

Table 13

Time Allocated to Teacher Locations for Greg at Three Points in the Referral-to-Placement Process

Teacher Location	Time 1	Time 2	Time 3
In Front	42.0	53.2	10.5
At Desk	0.8	7.8	7.7
Among Students	99.4	123.8	113.5
Beside Student	9.8	14.0	1.4
Back	8.8	3.6	24.1
Out	0.7	0.6	0.2

[a]Entries are the average number of minutes for one day, based on two days of observation.

Table 14

Time Allocated to Teacher Activities for Greg at Three Points in the Referal-to-Placement Process

Teacher Activity	Time 1	Time 2	Time 3
No Response	69.9	103.4	97.9
Teaching	79.4	92.8	55.1
Other Talk	7.9	4.6	3.4
Approval	2.4	0.9	0.1
Disapproval	1.8	1.2	0.7

[a]Entries are the average number of minutes for one day, based on two days of observation.

Table 15

Time Greg Engaged in Various Responses at Three Points in the Referral-to-Placement Process

Student Response	Time 1	Time 2	Time 3
Academic	38.6	30.2	20.5
Writing	16.9	11.6	10.7
Acad Game	7.3	3.8	0.8
Read Aloud	2.0	2.9	2.5
Read Silently	1.1	2.6	1.6
Talk Acad	7.5	5.2	3.4
Ask Acad Q	3.4	3.7	1.0
Ans Acad Q	0.4	0.4	0.5
Task Management	93.7	149.4	109.4
Passive Response	64.6	112.4	79.5
Raise Hand	1.4	1.1	1.2
Look for Mats	8.1	6.8	4.2
Move	4.2	4.4	3.3
Play Appr	15.4	24.7	21.2
Inappropriate	29.3	23.9	27.2
Disruption	0.2	0.1	0.6
Play Inappr	3.1	1.9	1.7
Inappr Task	3.5	0.1	0.3
Talk Non-Acad	8.7	2.8	10.4
Inappr Locale	1.4	1.6	1.2
Look Around	12.3	17.4	12.9
Self-Stimulation	0.1	0.0	0.1

[a]Entries are the average number of minutes for one day, based on two days of observation.

Table 16

Time Allocated to Activities for Jim at Three Points in the Referral-to-Placement Process[a]

Activity	Time 1	Time 2	Time 3
Academic	114.2	171.0	141.5
Reading	61.3	64.8	71.1
Math	23.5	38.5	39.6
Spelling	25.2	8.8	20.3
Handwriting	0.0	0.0	0.0
Language	4.2	27.3	2.8
Science	0.0	12.3	0.0
Social Studies	0.0	19.3	7.7
Non-Academic	48.0	28.8	22.5
Arts/Crafts	14.0	0.0	0.0
Free Time	6.0	0.0	6.0
Business Management	21.7	15.8	7.0
Transition	6.3	13.0	9.5

[a]Entries are the average number of minutes for one day, based on two days of observation.

Table 17

Time Allocated to Tasks for Jim at Three Points in the Referral-to-Placement Process[a]

Task	Time 1	Time 2	Time 3
Readers	18.6	42.0	12.3
Workbooks	25.2	20.3	44.5
Worksheets	43.1	43.1	24.5
Paper & Pencil	16.5	8.8	22.1
Listen to Lecture	3.5	2.8	4.2
Other Media	21.0	53.6	36.1
Teacher-Student Discussion	17.5	15.8	8.8
Fetch & Put Away	11.6	13.0	9.5

[a]Entries are the average number of minutes for one day, based on two days of observation.

Table 18

Time Allocated to Teaching Structures for Jim at Three Points in the Referral-to-Placement Process[a]

Structure	Time 1	Time 2	Time 3
Entire Group	123.2	156.8	106.8
Small Group	38.5	33.9	27.3
Individual	0.0	8.8	29.1

[a]Entries are the average number of minutes for one day, based on two days of observation.

Table 19

Time Allocated to Teacher Locations for Jim at Three Points in the Referral-to-Placement Process[a]

Teacher Location	Time 1	Time 2	Time 3
In Front	56.9	34.5	18.2
At Desk	33.9	21.4	35.6
Among Students	29.9	86.3	66.9
Beside Student	2.2	4.9	9.6
Back	8.4	11.4	2.6
Out	2.9	8.5	1.8

[a]Entries are the average number of minutes for one day, based on two days of observation.

Table 20

Time Allocated to Teacher Activities for Jim at Three Points in the Referral-to-Placement Process[a]

Teacher Activity	Time 1	Time 2	Time 3
No Response	58.8	100.7	87.8
Teaching	49.1	60.6	37.9
Other Talk	21.6	4.3	7.2
Approval	0.3	0.5	0.9
Disapproval	4.4	0.9	1.5

[a]Entries are the average number of minutes for one day, based on two days of observation.

Table 21

Time Jim Engaged in Various Responses at Three Points in the Referral-to-Placement Process[a]

Student Response	Time 1	Time 2	Time 3
Academic	34.6	37.4	35.0
Writing	26.9	22.5	15.4
Acad Game	1.5	3.1	0.9
Read Aloud	0.8	2.0	0.8
Read Silently	1.5	5.9	7.9
Talk Acad	1.6	2.1	2.8
Ask Acad Q	2.1	1.1	2.2
Ans Acad Q	0.2	0.7	0.5
Task Management	68.8	99.1	70.3
Passive Response	51.2	78.2	50.3
Raise Hand	4.3	2.0	3.2
Look for Mats	3.9	3.4	4.2
Move	4.9	6.1	5.3
Play Appr	4.5	9.4	7.3
Inappropriate	30.9	30.6	34.7
Disruption	0.0	0.1	0.9
Play Inappr	3.7	3.9	13.8
Inappr Task	2.7	1.9	3.2
Talk Non-Acad	8.5	4.0	2.1
Inappr Locale	6.5	3.4	4.7
Look Around	8.7	17.2	9.7
Self-Stimulation	0.8	0.1	0.3

[a]Entries are the average number of minutes for one day, based on two days of observation.

Table 22

PIAT Data for Jim

Subtest	Raw Score		Standard Score	
	Time 1	Time 2	Time 1	Time 2
Mathematics	27	41	89	103
Reading Recognition	23	29	80	92
Reading Comprehension	26	30	90	94
Spelling	25	28	85	87
General Information	33	35	106	104
Total	134	163	90	95

Table 23

Time Allocated to Activities for Bob at Three Points in the Referral-to-Placement Process[a]

Activity	Time 1	Time 2	Time 3
Academic	178.3	121.6	129.0
Reading	113.1	24.5	81.6
Math	10.5	25.2	29.8
Spelling	13.3	0.0	0.0
Handwriting	15.8	18.6	8.1
Language	0.0	18.2	0.0
Science	8.1	18.6	9.5
Social Studies	17.5	16.5	0.0
Non-Academic	4.6	57.8	18.2
Arts/Crafts	0.0	4.2	0.0
Free Time	0.0	22.1	0.0
Business Management	1.1	14.0	7.7
Transition	3.5	17.5	10.5

[a]Entries are the average number of minutes for one day, based on two days of observation.

Table 24

Time Allocated to Tasks for Bob at Three Points in the Referral-to-Placement Process[a]

Task	Time 1	Time 2	Time 3
Readers	22.1	7.7	4.2
Workbooks	6.3	0.0	9.8
Worksheets	54.3	32.6	47.3
Paper & Pencil	6.0	16.5	22.2
Listen to Lecture	7.0	14.0	5.3
Other Media	43.1	64.8	52.5
Teacher-Student Discussion	21.0	23.5	6.0
Fetch & Put Away	23.5	18.6	13.0

[a]Entries are the average number of minutes for one day, based on two days of observation.

Table 25

Time Allocated to Teaching Structures for Bob at Three Points in the Referral-to-Placement Process[a]

Structure	Time 1	Time 2	Time 3
Entire Group	82.9	138.9	70.7
Small Group	98.7	29.1	35.0
Individual	1.1	11.6	43.1

[a]Entries are the average number of minutes for one day, based on two days of observation.

Table 26

Time Allocated to Teacher Locations for Bob at Three Points in the Referral-to-Placement Process[a]

Teacher Location	Time 1	Time 2	Time 3
In Front	39.4	26.6	8.4
At Desk	9.0	6.8	30.9
Among Students	99.3	105.8	57.8
Beside Student	3.8	5.4	9.4
Back	1.9	1.1	0.1
Out	0.7	0.6	15.6

[a]Entries are the average number of minutes for one day, based on two days of observation.

Table 27

Time Allocated to Teacher Activities for Bob at Three Points in the Referral-to-Placement Process[a]

Teacher Activity	Time 1	Time 2	Time 3
No Response	78.1	96.6	85.4
Teaching	71.6	37.3	31.4
Other Talk	3.0	10.1	4.3
Approval	0.4	1.3	0.3
Disapproval	0.9	1.9	0.9

[a]Entries are the average number of minutes for one day, based on two days of observation.

Table 28

Time Bob Engaged in Various Responses at Three Points in the Referral-to-Placement Process[a]

Student Response	Time 1	Time 2	Time 3
Academic	34.7	12.9	25.8
Writing	12.5	7.9	15.2
Acad Game	1.9	0.9	0.8
Read Aloud	1.9	0.0	2.8
Read Silently	6.9	0.6	3.3
Talk Acad	7.4	1.9	0.8
Ask Acad Q	2.2	0.9	2.1
Ans Acad Q	1.9	0.7	0.8
Task Management	94.4	104.9	79.6
Passive Response	58.0	65.1	59.2
Raise Hand	3.3	6.0	1.9
Look for Mats	11.9	13.0	2.1
Move	6.9	7.0	6.2
Play Appr	14.3	13.8	10.2
Inappropriate	24.6	29.2	17.3
Disruption	0.3	0.9	0.1
Play Inappr	4.9	3.7	2.9
Inappr Task	2.0	1.2	0.0
Talk Non-Acad	3.9	7.4	6.8
Inappr Locale	2.1	3.9	0.2
Look Around	11.3	11.8	7.3
Self-Stimulation	0.1	0.3	0.0

[a]Entries are the average number of minutes for one day, based on two days of observation.

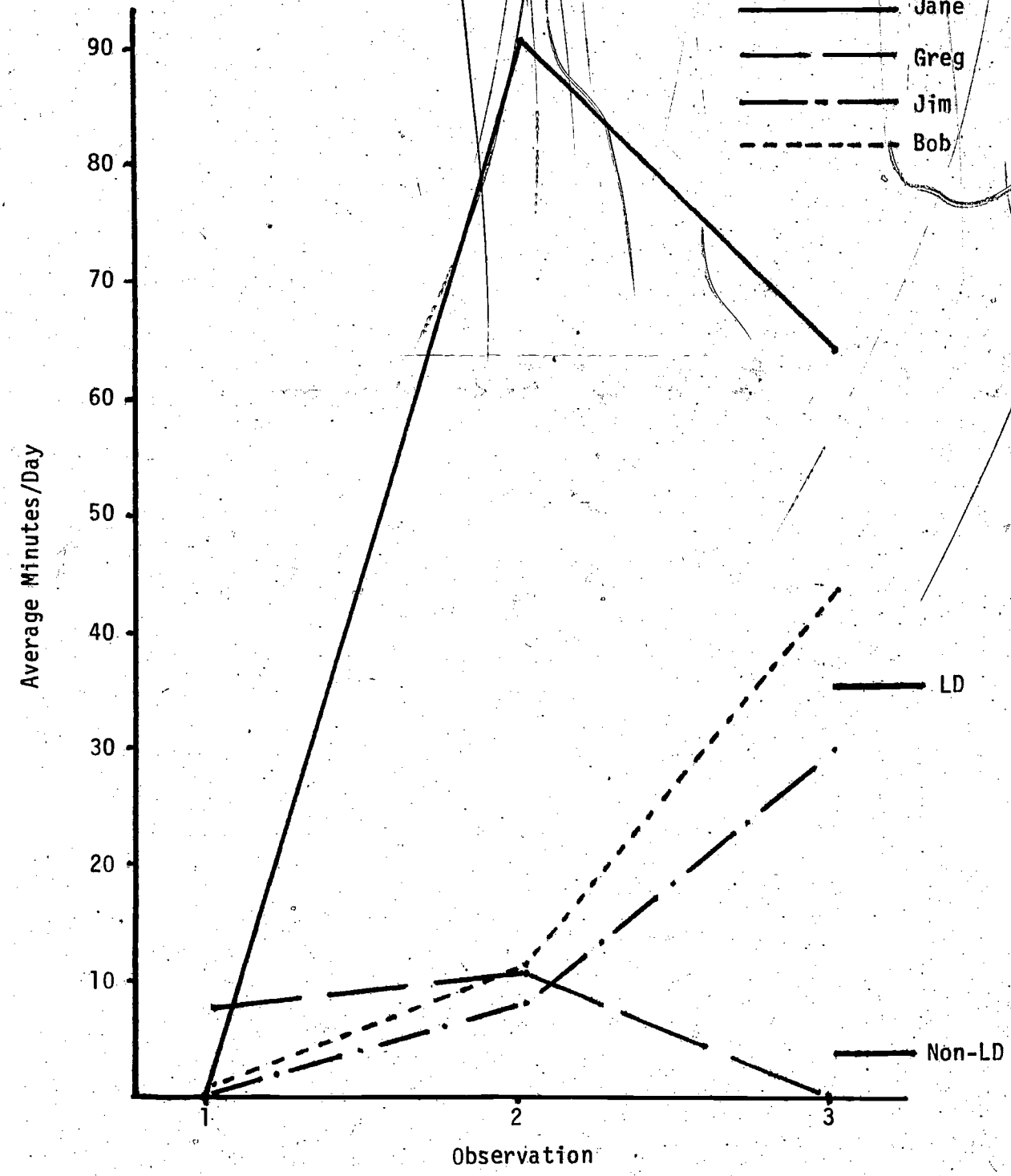

Figure 1. Times Allocated to Individual Structures as a Function of the Referral-to-Placement Process.

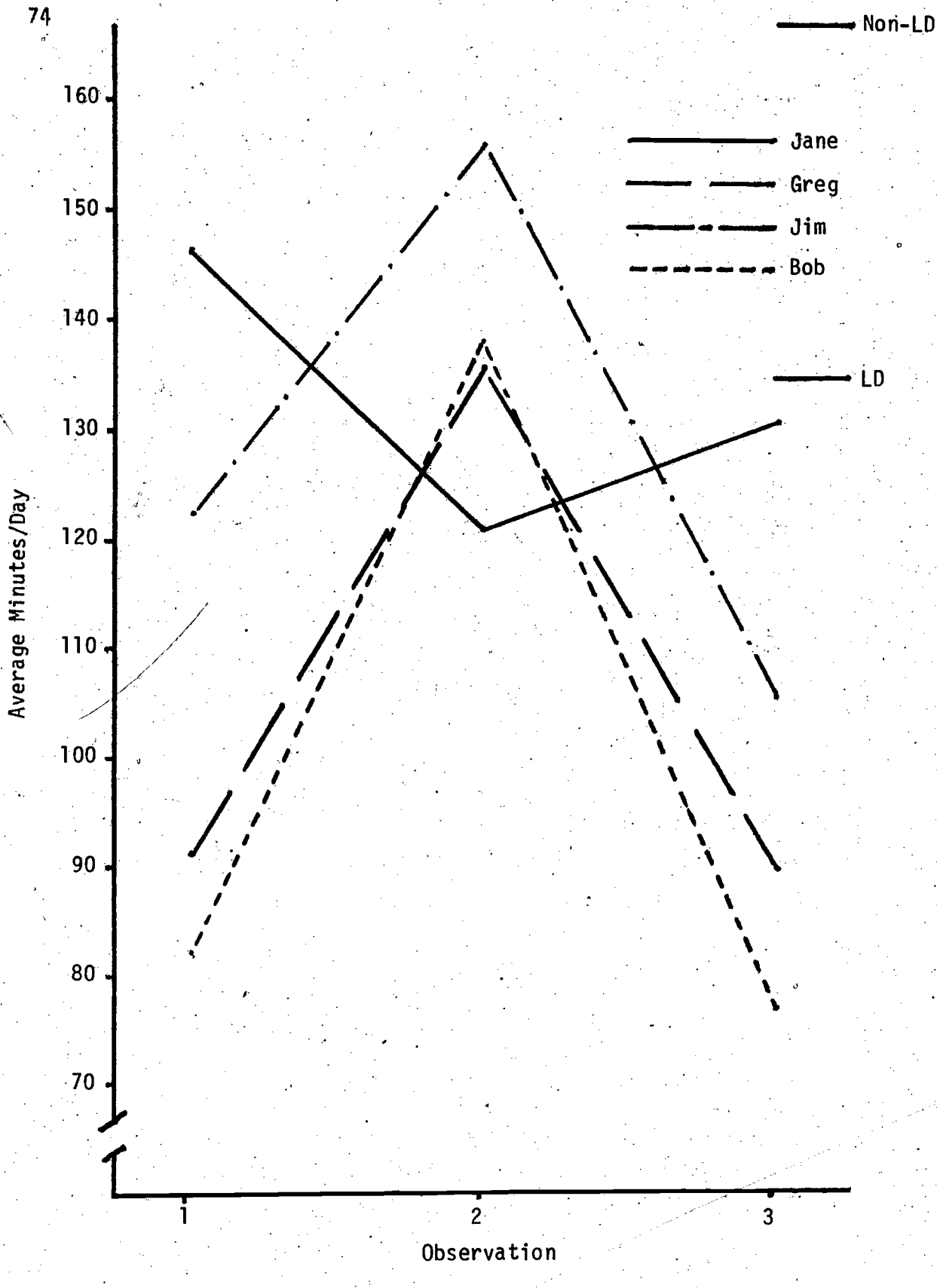

Figure 2. Times Allocated to Entire Group Structures as a Function of the Referral-to-Placement Process.

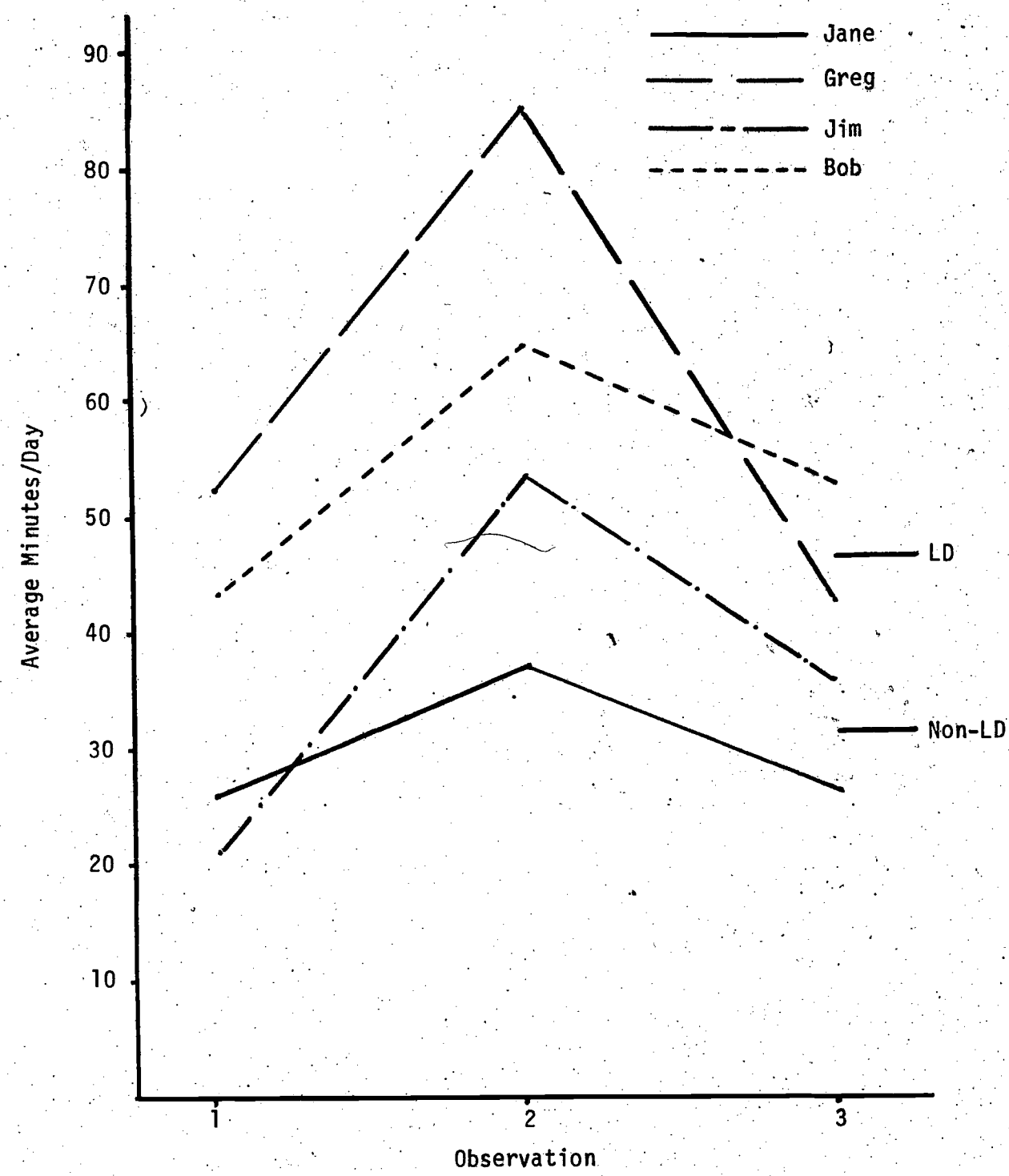

Figure 3. Times Allocated to Other Media Tasks as a Function of the Referral-to-Placement Process.

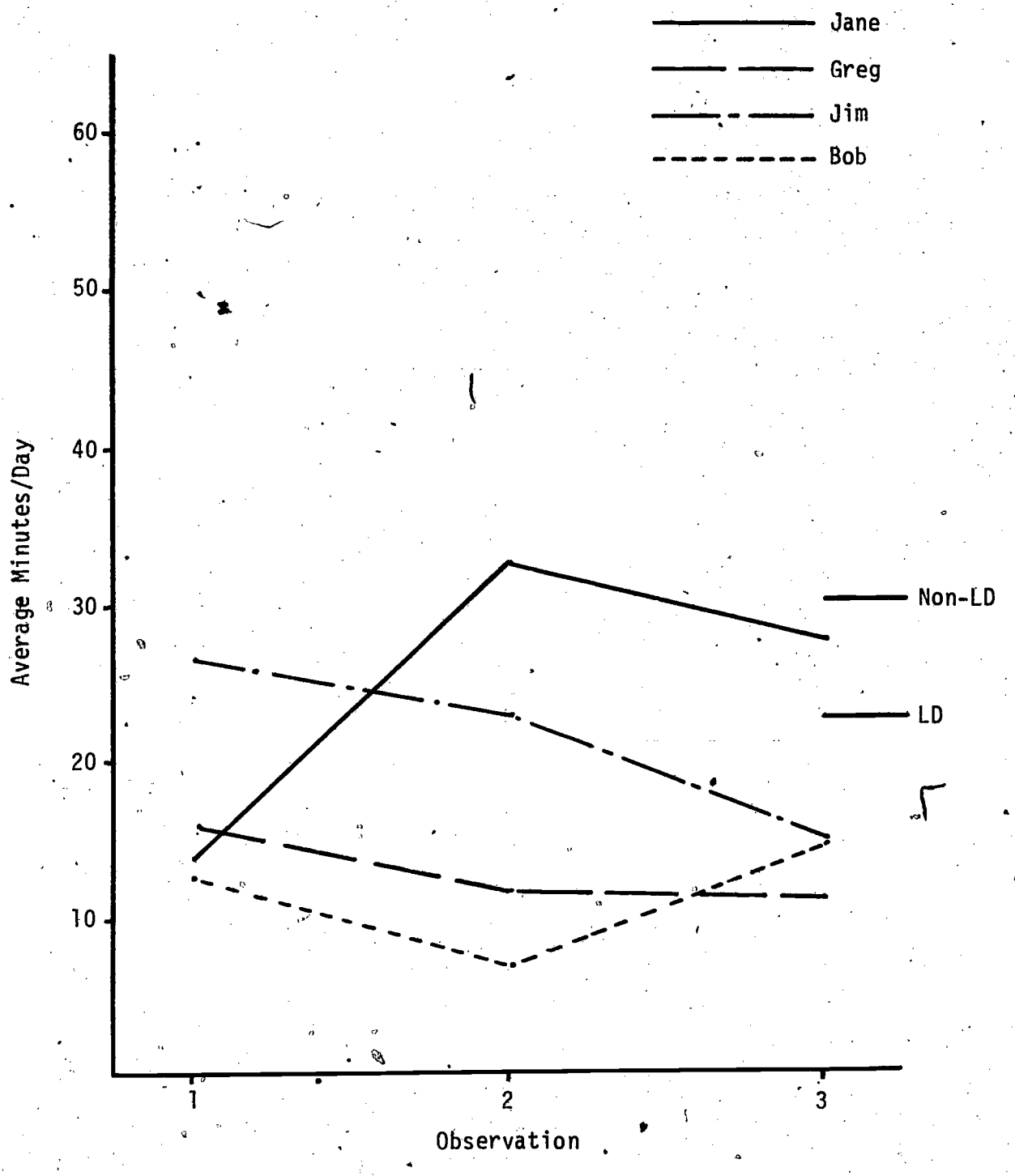

Figure 4. Times Students Engaged in Writing as a Function of the Referral to Placement Process.

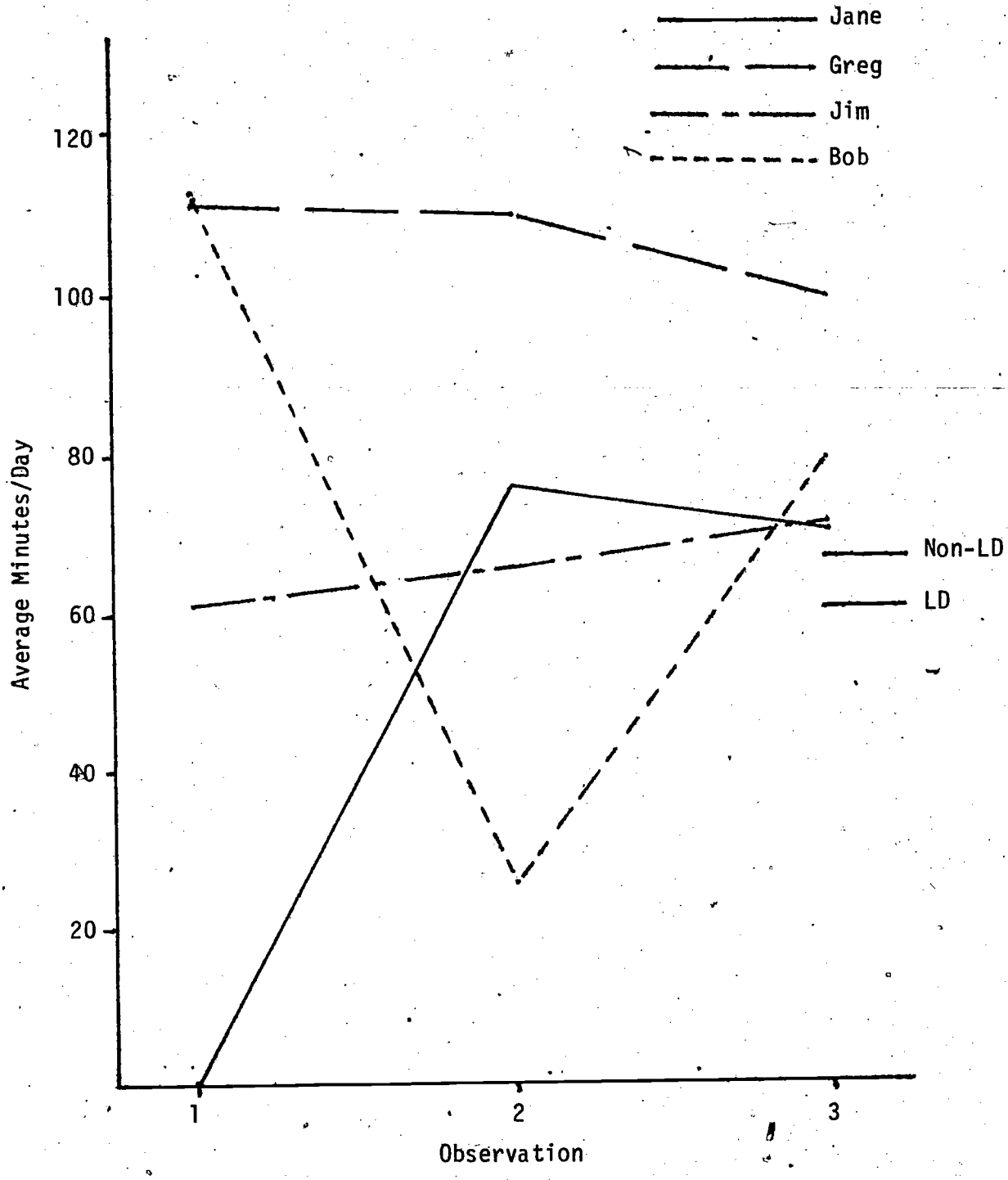

Figure 5. Times Allocated to Reading as a Function of the Referral-to-Placement Process

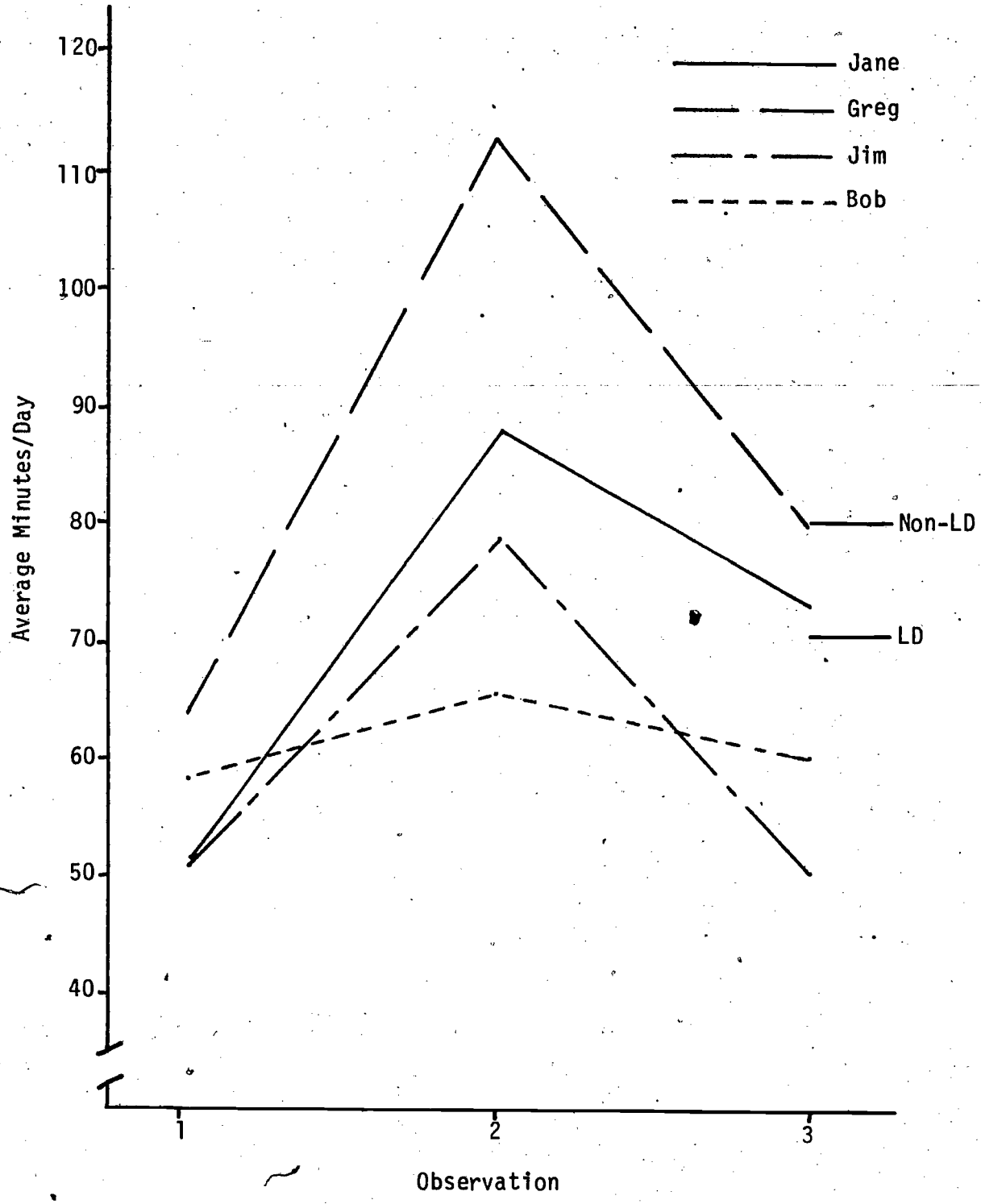

Figure 6. Times Students Engaged in Passive Responding as a Function of the Referral-to-Placement Process.

APPENDIX A

Definitions and Examples of CISSAR Events

Instructional Activity

(Subject area of learning experience being provided to target student by teacher, aide, or peer tutor or by target student to tutee.)

> Note: Anytime the activity changes, move to a new coding block

Activity/Code	Definition	Examples	Special Notes
Reading (R)	Reading instructions or activity; oral and silent reading from books, discussion of words, sounds, vowels, consonants, phonics	reading library book talking about ch sound sitting at reading table draw picture about story	Include: • how to use dictionary, encyclopedia,...(reference books) • learning ABC's (but, not when learning how to write) • draw picture of what read; act out story
Math (M)	Math instructions or activity; numbers, geometry, time, weights, metrics, measurement, story problems	working time worksheet measuring each other's height writing math problem on board finds examples of "less than" find number of days in 2 years	
Spelling (S)	Spelling instruction or activity; copying spelling work, spelling test	taking spelling test playing spelling bee game looking up correct spelling of missed word	Include: • use of dictionary to find spelling of word
Handwriting (H)	Handwriting instruction or activity; focus on mechanics of writing letters or words (print, cursive, etc.); how to hold pencil, how to move arm, discussion of size of letters, lines on paper	practice penmanship matches capital and lower case letters	

A-1

Instructional Activity - cont.

Activity	Definition	Examples	Special Notes
Language (L)	Language instruction or activity; focus on speech, vocabulary, and language meaning (words, physical relationships, etc.); creative writing; listening exercises; other languages	writing book report on story in reader points to "on top," "under," etc. learns how to say "thank you" in 5 languages	Include: • book reports (writing or reading) • looking up definition in dictionary • public speaking exercises
Science (Sc)	Science instruction or activity; science-related topics (chemistry, electricity, space travel, electronics, nature, insects, weather, mammals, body, exercise, personal hygiene)	discuss weather perform experimentation on electricity school nurse talks about hygiene reads Weekly Reader article about insects	Include: • watching or doing experiment • exercises in classroom • sex education (physical aspects-not relationships) • speakers on drugs/alcohol • science article in Weekly Reader
Social Studies (Ss)	Social studies instruction or activity; cultures, ways of life, jobs, roles; maps; music topics (instruments, singing, scales, notes)	talk about sex biases sing Thanksgiving songs label map of U.S. listen to lecture on Civil War	Include: • sex education - relationships in general • unit on friendships • special education topics - relations with handicapped • customs; holidays • history
Arts/Crafts (Ac)	Art-related instruction or activity; coloring, drawing, cutting, pasting	make poster of primary colors draw picture of self watch slides of sculptures	Include: • viewing art (own or others) • decorating (bulletin board, classroom) Within Ac time, putting away or getting new materials is still Ac; only change to Tn at beginning or end of Ac time.

Instructional Activity - cont.

Activity	Definition	Examples	Special Notes
Free Time (Ft)	Period during which student may choose activity - can be academic; study time	works math when told to do anything wants to do after student finishes assignment, is in library area reading	Include: • extra-credit work If everyone has free time, but target student is told what he/she must do, do not code Ft. Code the subject area which he is required to do.
Class Business/ Management (Bm)	Activity focused on scheduling, discipline, rules; usually occurs regularly at start of day; show and tell	picks up lunch tickets class talks about fight on playground during recess say "here" during attendance check	Include: • Pledge of Allegiance, morning songs • sex, relationships, drugs, etc. when related to specific problem in school • taking attendence
Transition (Tn)	Time between two other activities; teacher signals end of one (put away) and time to prepare for new activity. Ends when teacher starts instruction in new activity	class breaks into groups line up to go to recess put away readers and get out math books	For arts/crafts, Tn is coded only before and after entire activity
Can't Tell (CT)	Activities that do not seem to fit in other categories. See coordinator to discuss - must change to another code.		Make note of activity on separate sheet so will remember events to discuss with coordinator

Academic Task

(Materials used by target student for instructional activity)

Note: Any time the task changes, move to a new coding block

Task/Code	Definition	Examples	Special Notes
Readers (Rr)	Printed book, bound material	library book math textbook comic book	Include: • magazines, Weekly Reader • reference books (dictionary, encyclopedia)
Workbooks (Wb)	Paperback material in which student could write (even if student is required by teacher to write on separate paper or in notebook)	spelling workbook language workbook handwriting workbook	
Worksheets (Ws)	Separate prepared teacher sheets (usually ditto or photocopy) on which students write; blackboard writing by student	student practices letters on blackboard dittoed crossword puzzle	Include: • 1 page torn from workbook • writing Weekly Reader exercise • teacher made or printed tests
Paper and Pencil (Pp)	Tasks where student writes on paper using pencil, pen, crayon, etc.; includes writing in notebook	piece of notebook paper for spelling test	If students are taking notes during teacher lecture to remember points, code Ll
Listen to Teacher Lecture (Ll)	Teacher talking or writing on board, and student expected to look and listen	watches teacher demonstrate exercises listens to teacher talk about telling time takes notes as teacher presents ideas for field field trip	Code Ll even if student is taking notes

Task/Code	Definition	Examples	Special Notes
Other Media (Om)	Special materials; film, tape recorder, game, arts and crafts materials, clocks, telephone, play/drama	watches movie listens to tape recorder works on calculator acts out story part	Include: • calculator • animals
Teacher-student Discussion (Tsd)	Student talking with teacher; ask-answer question All other tasks take precedence	student answers teacher question students in class talk with teacher about friends student tutors another on ABC's student reads book report to class	Include: • peer tutoring unless using other materials • student verbal presentations (including reading book report) All other tasks take precedence over Tsd. Take cue from teacher for change from Ll to Tsd.
Fetch/Put away (Fp)	Students changing materials-putting away and getting, cleaning up	line up for lunch picks up materials to throw away before completing art project student hands out worksheets	When student has absolutely no materials, and is not supposed to have any materials (such as when has free time), code Fp.

Structure

(How student is grouped for instructional activity)

Note: Any time the structure changes, move to a new coding block

Structure/Code	Definition	Examples	Special Notes
Entire Group (Eg)	Student receiving instruction with all other students in classroom	class lecture class freetime	For Eg, teaching (or free time is for <u>everyone</u>) Number is <u>not</u> the criterion - if class has 5 students and instruction is directed to all of them, code Eg
Small Group (Sg)	Student is in part of class that has been separated from rest	reading group discussion group students in pairs	Include: • two students working together away from rest of class
Individual (I)	Student is alone (in corral, at table) or working one-to-one with teacher or aide	student working on science experiment alone while other read from text aide tutors student	Does <u>not</u> occur during free time <u>except</u> when free time was created especially for student

Teacher Position

(Place of teacher in relation to all students)

Teacher Position/ Code	Definition	Examples	Special Notes
In Front/IF	in front of majority of students	- standing at blackboard - at front bulletin board	
At Desk/AD	standing or seated at teacher's desk	- looking in desk for notebook - at desk collecting lunch money	
Among Students/AS	standing or seated among students	- walking around class checking student work - seated with reading group	
Side/S	standing to the side of students and not AS	- student leaning over child's desk - talking to student at his desk	- working individually with a student
Back/B	standing or sitting in back of classroom away from majority of students	- working at isolated desk in back of room -putting up art pictures on back bulletin board	
Out of Room/O	out of the room	- in hall talking to parent - in teacher's lounge	

Teacher Activity

(Coded in relation to target student or group in which he is a member)

Teacher Behavior/ Code	Definition	Examples	Special Notes
No Response/NR	makes no observable response	- at desk grading papers - out of room	- working individually with another student
Teaching/T	instruction or giving a lesson to students child must have opportunity to learn	- explaining at blackboard - asking question - talking about academics, e.g. giving directions	- key is active involvement by teacher
Other Talk/OT	- talking about class business, rules, schedules, future activities - all teacher talk that is not approval, disapproval, or teaching	- talking about recess - talking about mother's hospital stay - collecting lunch money	
Approval/A	expresses praise for student work or conduct	- teacher hugs student - teacher smiles - "Your map looks great"	- includes verbal comments, gestures, physical behaviors
Disapproval/D	expresses dislike or disgust with student work, appearance or conduct	- frowns at student - that is the wrong answer - "You're not trying"	- includes verbal comments, gestures, and physical behaviors

Student Response

(Academic response, task management, or inappropriate behavior of target student)

Student Response/ Code	Definition	Examples	Special Notes
Academic Responses	student responses made to academic task	- erasing	
Writing/W	students observed marking academic materials with pen, pencil, crayon	- marks answers on ditto sheet with crayon - completes math problems from workbook	- does not include drawing pictures, scribbling - used for tests
Academic Game/G	engaged with an academic media task played individually or with peer	- includes flashcards, word games, coloring, abacus - student responses are verbal, manipulatory or social in nature - 4 students are playing a spelling game	- includes calculator - flashcards when with a classmate or as a practice tool
Read Aloud/RA	when student looking at reading material and saying aloud what is written in print	- student reads a paragraph to rest of reading group -reads a sentence aloud to "sound out" unfamiliar words	- used when teacher checks student's knowledge of flashcard

Student Response continued

Student Response/ Code	Definition	Examples	Special Notes
Reading Silent/RS	looking at reading material for at least 2 seconds, and/or eye movements indicate scanning materials on desk (3' radius) or held in student's hands. Readers must be open to a page.	- student is reading directions in language workbook - student is scanning workbook for familiar words - student reads to self a set of numbers from math book	- reading words or numbers - not rapid flipping - only code when reading materials include several pages (not worksheet)
Talk About Academics/ TA	talk back and forth about academic materials or assignment	- student tells classmate answer to math question - student talks during show and tell - student recites a poem he's memorized	- child may be talking to himself or a peer - coded only when target student talking, not when listening - when reciting a poem or story from memory - student doing all work in limelight
Answer Academic Question/ANQ	student either verbally or gesturally responds to teacher's academic question	- student says "I don't know" to teacher's question - student spells a word for teacher	- answer may be correct or incorrect - answer should be almost immediate
Ask Academic Question/ Ask	verbally ask the teacher a question related to academics	"Is 3 + 4 = to 7?"	- must be an academic question: When is it time for lunch? is not ASK

Student Response/ Code	Definition	Examples	Special Notes
Task Management	student behaviors which enable student to engage in academic task -- not direct responses to academic tasks		
Passive Response	student is looking at teacher for instructions; at blackboard for direction; or at another student asking or answering a question -- Key: looking at teacher or peer	- student looks at teacher while she lectures - student pages through math book to final assignment - teacher asks student to pass out ditto sheets to class	- coded for listener when two students are talking about academics - rapid flipping of pages - two students are playing a game; target student observing - reading (ect.) takes precedence
Raising Hand/RH	student's hand raised; may be accompanied by looking for teacher and if student raises hand in a request to answer teacher question	- teacher asks question and student raises hand to respond - student needs help with math so raises hand to alert teacher	- RH plus yelling equals DI (disruption)

Student Response continued

Student Response/ Code	Definition	Examples	Special Notes
Look for Materials/ LM	student observed looking for or putting away materials; includes use of materials away from desk (e.g. answer sheets, reference books)	- student goes to teacher's desk for correction sheet - student returns dictionary to shelf - student looks for paper and pencil	- may include use of reference materials away from desk; look up word in dictionary sharpening pencil stapling
Moves to New Academic Station/M	student moves to new area as station for next activity- activity is in transition	- student moves to learning center during free time - students lining up for recess	- includes lining up and moving when in compliance with teacher request
Play Appropriate/PA	engaged in play behaviors approved by teacher may involve toys from home; may be strictly social	- students play musical chairs during party - students play Monopoly during free time	- code G if play becomes an academic game - code when student puts head on desk when told to or when has free time drawing, coloring drinking water, washing hands
Inappropriate behavior			
Disruption/DI	behaviors which are aggressive or produce loud noises; includes loud talk	- trips another student - shakes fist at other student - yells - poke another student	- DI takes precedence over inappropriate locale

Student Response continued

Student Response/ Code	Definition	Examples	Special Notes
Play Inappropriate/ PI	play not approved by teacher	- play involving squirt guns, toys hidden in desk - shoots rubber bands; paper airplanes	- includes scribbling or drawing at wrong times - code when student puts head on desk when is not supposed to
Inappropriate Task/ IT	engaged in task without teacher approval; not related to task assigned	- student colors to avoid math assignment - reads story during Social Studies	- avoidance of assigned task is key
Talk Non-Academic/ TNA	talks aloud to peer about non-academic materials not related to assignment	- students talk about after school plans - "What time is lunch?"	- can be directed to teacher or student - includes passing notes
Inappropriate Locale/ IL	child out of seat and away from instruction site looses contact with seat	- student goes to bathroom without permission - student becomes angry and leaves school - student stands on desk	
Look Around/LA	student looking away from academic task	- child looks out window - looks at floor then ceiling	- code AT if student looking at classmate and answering question
Self Stimulation/ SST	active behaviors of child like rapid rocking or shaking; maintained for 2 to 3 seconds	- student rocks back & forth - rapidly moves his pencil back and forth	- single major feature of child's behavior - academic responses take precedence over SST

APPENDIX B

Optical Scanner Coding Sheet

ID | PAGE | START 1 | STOP 1 | START 2 | STOP 2 | START 3 | STOP 3 | OBS #

DO NOT MARK HERE

Institute for Research on Learning Disabilities
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CISSAR Coding Sheet

R M S H L Sc Ss Ac Ft Bm Tn Ct | Rr Wb Ws Pp Ll Om | Tsd Fp | Eg Sg I

IF AD AS S B D | NR T OT A D | W G RA RS TA | AND ASK | AT RH LM M PA | DI PI IT | TNA | IL LA SST

Stop Code
A B C D E
F G H I J
K L M N O
P Q

START 1

STOP 1

R M S H L Sc Ss Ac Ft Bm Tn Ct | Rr Wb Ws Pp Ll Om | Tsd Fp | Eg Sg I

IF AD AS S B D | NR T OT A D | W G RA RS TA | AND ASK | AT RH LM M PA | DI PI IT | TNA | IL LA SST

Stop Code
A B C D E
F G H I J
K L M N O
P Q

START 2

STOP 2

R M S H L Sc Ss Ac Ft Bm Tn Ct | Rr Wb Ws Pp Ll Om | Tsd Fp | Eg Sg I

IF AD AS S B D | NR T OT A D | W G RA RS TA | AND ASK | AT RH LM M PA | DI PI IT | TNA | IL LA SST

Stop Code
A B C D E
F G H I J
K L M N O
P Q

START 3

STOP 3

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APPENDIX C

Guidelines for Anecdotal Recordings

Observer Number _____

Observation Pages _____

Guidelines for Anecdotal Recordings

School # _____ Class # _____ Student # _____

Classroom Procedures (Note general class arrangement, schedule, and atmosphere. Anything unusual?)

Target Student (Comment briefly on each of the following areas for the target student observed.)

Location (where does the child sit in relation to where teacher does most teaching?)

Physical appearance (is child's appearance similar to peer group?)

Teacher-student relationship (are interactions between teacher and student similar to those of teacher with other students?)

Peer relationships (are interactions between target student and other students similar to those among most students in class?)

Attention to task (how does target student compare to other students?)

Other (is there anything about the target student that seems different from other students in the class?)

Validity of Observation (Is there any reason why you would believe that the observation is not a valid reflection of typical classroom activities, interactions, etc?)

PUBLICATIONS

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Requests should be directed to: Editor, IRLD, 350 Elliott Hall; 75 East River Road, University of Minnesota, Minneapolis, MN 55455.

Ysseldyke, J. E. Assessing the learning disabled youngster: The state of the art (Research Report No. 1). November, 1977.

Ysseldyke, J. E., & Regan, R. R. Nondiscriminatory assessment and decision making (Monograph No. 7). February, 1979.

Foster, G., Algozzine, B., & Ysseldyke, J. Susceptibility to stereotypic bias (Research Report No. 3). March, 1979.

Algozzine, B. An analysis of the disturbingness and acceptability of behaviors as a function of diagnostic label (Research Report No. 4). March, 1979.

Algozzine, B., & McGraw, K. Diagnostic testing in mathematics: An extension of the PIAT? (Research Report No. 5). March, 1979.

Deno, S. L. A direct observation approach to measuring classroom behavior: Procedures and application (Research Report No. 6). April, 1979.

Ysseldyke, J. E., & Mirkin, P. K. Proceedings of the Minnesota roundtable conference on assessment of learning disabled children (Monograph No. 8). April, 1979.

Somwaru, J. P. A new approach to the assessment of learning disabilities (Monograph No. 9). April, 1979.

Algozzine, B., Forgnone, C., Mercer, C. D., & Trifiletti, J. J. Toward defining discrepancies for specific learning disabilities: An analysis and alternatives (Research Report No. 7). June, 1979.

Algozzine, B. The disturbing child: A validation report (Research Report No. 8). June, 1979.

Note: Monographs No. 1 - 6 and Research Report No. 2 are not available for distribution. These documents were part of the Institute's 1979-1980 continuation proposal, and/or are out of print.

Ysseldyke, J. E., Algozzine, B., Regan, R., & Potter, M. Technical adequacy of tests used by professionals in simulated decision making (Research Report No. 9). July, 1979.

Jenkins, J. R., Deno, S. L., & Mirkin, P. K. Measuring pupil progress toward the least restrictive environment (Monograph No. 10). August, 1979.

Mirkin, P. K., & Deno, S. L. Formative evaluation in the classroom: An approach to improving instruction (Research Report No. 10). August, 1979.

Thurlow, M. L., & Ysseldyke, J. E. Current assessment and decision-making practices in model programs for the learning disabled (Research Report No. 11). August, 1979.

Deno, S. L., Chiang, B., Tindal, G., & Blackburn, M. Experimental analysis of program components: An approach to research in CSDC's (Research Report No. 12). August, 1979.

Ysseldyke, J. E., Algozzine, B., Shinn, M., & McGue, M. Similarities and differences between underachievers and students labeled learning disabled: Identical twins with different mothers (Research Report No. 13). September, 1979.

Ysseldyke, J., & Algozzine, R. Perspectives on assessment of learning disabled students (Monograph No. 11). October, 1979.

Poland, S. F., Ysseldyke, J. E., Thurlow, M. L., & Mirkin, P. K. Current assessment and decision-making practices in school settings as reported by directors of special education (Research Report No. 14). November, 1979.

McGue, M., Shinn, M., & Ysseldyke, J. Validity of the Woodcock-Johnson psycho-educational battery with learning disabled students (Research Report No. 15). November, 1979.

Deno, S., Mirkin, P., & Shinn, M. Behavioral perspectives on the assessment of learning disabled children (Monograph No. 12). November, 1979.

Sutherland, J. H., Algozzine, B., Ysseldyke, J. E., & Young, S. What can I say after I say LD? (Research Report No. 16). December, 1979.

Deno, S. L., & Mirkin, P. K. Data-based IEP development: An approach to substantive compliance (Monograph No. 13). December, 1979.

Ysseldyke, J., Algozzine, B., Regan, R., & McGue, M. The influence of test scores and naturally-occurring pupil characteristics on psycho-educational decision making with children (Research Report No. 17). December, 1979.

Algozzine, B., & Ysseldyke, J. E. Decision makers' prediction of students' academic difficulties as a function of referral information (Research Report No. 18). December, 1979.

Ysseldyke, J. E., Algozzine, B., Regan, R. R., Potter, M., Richey, L., & Thurlow, M. L. Psychoeducational assessment and decision making: A computer-simulated investigation (Research Report No. 32). July, 1980.

Ysseldyke, J. E., Algozzine, B., Regan, R. R., Potter, M., & Richey, L. Psychoeducational assessment and decision making: Individual case studies (Research Report No. 33). July, 1980.

Ysseldyke, J. E., Algozzine, B., Regan, R., Potter, M., & Richey, L. Technical supplement for computer-simulated investigations of the psychoeducational assessment and decision-making process (Research Report No. 34). July, 1980.

Algozzine, B., Stevens, L., Costello, C., Beattie, J., & Schmid, R. Classroom perspectives of LD and other special education teachers (Research Report No. 35). July, 1980.

Algozzine, B., Siders, J., Siders, J., & Beattie, J. Using assessment information to plan reading instructional programs: Error analysis and word attack skills (Monograph No. 14). July, 1980.

Ysseldyke, J., Shinn, M., & Epps, S. A comparison of the WISC-R and the Woodcock-Johnson Tests of Cognitive Ability (Research Report No. 36). July, 1980.

Algozzine, B., & Ysseldyke, J. E. An analysis of difference score reliabilities on three measures with a sample of low achieving youngsters (Research Report No. 37). August, 1980.

Shinn, M., Algozzine, B., Marston, D., & Ysseldyke, J. A theoretical analysis of the performance of learning disabled students on the Woodcock-Johnson Psycho-Educational Battery (Research Report No. 38). August, 1980.

Richey, L. S., Ysseldyke, J., Potter, M., Regan, R. R., & Greener, J. Teachers' attitudes and expectations for siblings of learning disabled children (Research Report No. 39). August, 1980.

Ysseldyke, J. E., Algozzine, B., & Thurlow, M. L. (Eds.). A naturalistic investigation of special education team meetings (Research Report No. 40). August, 1980.

Meyers, B., Meyers, J., & Deno, S. Formative evaluation and teacher decision making: A follow-up investigation (Research Report No. 41). September, 1980.

Fuchs, D., Garwick, D. R., Featherstone, N., & Fuchs, L. S. On the determinants and prediction of handicapped children's differential test performance with familiar and unfamiliar examiners (Research Report No. 42). September, 1980.

Ysseldyke, J. E., & Algozzine, B. Diagnostic classification decisions as a function of referral information (Research Report No. 19). January, 1980.

Deno, S. L., Mirkin, P. K., Chiang, B., & Lowry, L. Relationships among simple measures of reading and performance on standardized achievement tests (Research Report No. 20). January, 1980.

Deno, S. L., Mirkin, P. K., Lowry, L., & Kuehnle, K. Relationships among simple measures of spelling and performance on standardized achievement tests (Research Report No. 21). January, 1980.

Deno, S. L., Mirkin, P. K., & Marston, D. Relationships among simple measures of written expression and performance on standardized achievement tests (Research Report No. 22). January, 1980.

Mirkin, P. K., Deno, S. L., Tindal, G., & Kuehnle, K. Formative evaluation: Continued development of data utilization systems (Research Report No. 23). January, 1980.

Deno, S. L., Mirkin, P. K., Robinson, S., & Evans, P. Relationships among classroom observations of social adjustment and sociometric rating scales (Research Report No. 24). January, 1980.

Thurlow, M. L., & Ysseldyke, J. E. Factors influential on the psychoeducational decisions reached by teams of educators (Research Report No. 25). February, 1980.

Ysseldyke, J. E., & Algozzine, B. Diagnostic decision making in individuals susceptible to biasing information presented in the referral case folder (Research Report No. 26). March, 1980.

Thurlow, M. L., & Greener, J. W. Preliminary evidence on information considered useful in instructional planning (Research Report No. 27). March, 1980.

Ysseldyke, J. E., Regan, R. R., & Schwartz, S. Z. The use of technically adequate tests in psychoeducational decision making (Research Report No. 28). April, 1980.

Richey, L., Potter, M., & Ysseldyke, J. Teachers' expectations for the siblings of learning disabled and non-learning disabled students: A pilot study (Research Report No. 29). May, 1980.

Thurlow, M. L., & Ysseldyke, J. E. Instructional planning: Information collected by school psychologists vs. information considered useful by teachers (Research Report No. 30). June, 1980.

Algozzine, B., Webber, J., Campbell, M., Moore, S., & Gilliam, J. Classroom decision making as a function of diagnostic labels and perceived competence (Research Report No. 31). June, 1980.

Algozzine, B., & Stoller, L. Effects of labels and competence on teachers' attributions for a student (Research Report No. 43). September, 1980.

Ysseldyke, J. E., & Thurlow, M. L. (Eds.). The special education assessment and decision-making process: Seven case studies (Research Report No. 44). September, 1980.

Ysseldyke, J. E., Algozzine, B., Potter, M., & Regan, R. A descriptive study of students enrolled in a program for the severely learning disabled (Research Report No. 45). September, 1980.

Marston, D. Analysis of subtest scatter on the tests of cognitive ability from the Woodcock-Johnson Psycho-Educational Battery (Research Report No. 46). October, 1980.

Algozzine, B., Ysseldyke, J. E., & Shinn, M. Identifying children with learning disabilities: When is a discrepancy severe? (Research Report No. 47). November, 1980.

Fuchs, L., Tindal, J., & Deno, S. Effects of varying item domain and sample duration on technical characteristics of daily measures in reading (Research Report No. 48). January, 1981.

Marston, D., Lowry, L., Deno, S., & Mirkin, P. An analysis of learning trends in simple measures of reading, spelling, and written expression: A longitudinal study (Research Report No. 49). January, 1981.

Marston, D., & Deno, S. The reliability of simple, direct measures of written expression (Research Report No. 50). January, 1981.

Epps, S., McGue, M., & Ysseldyke, J. E. Inter-judge agreement in classifying students as learning disabled (Research Report No. 51). February, 1981.

Epps, S., Ysseldyke, J. E., & McGue, M. Differentiating LD and non-LD students: "I know one when I see one" (Research Report No. 52). March, 1981.

Evans, P. R., & Peham, M. A. S. Testing and measurement in occupational therapy. A review of current practice with special emphasis on the Southern California Sensory Integration Tests (Monograph No. 15). April, 1981.

Fuchs, L., Wesson, C., Tindal, G., & Mirkin, P. Teacher efficiency in continuous evaluation of IEP goals (Research Report No. 53). June, 1981.

Fuchs, D., Featherstone, N., Garwick, D. R., & Fuchs, L. S. The importance of situational factors and task demands to handicapped children's test performance (Research Report No. 54). June, 1981.

Tindal, G., & Deno, S. L. Daily measurement of reading: Effects of varying the size of the item pool (Research Report No. 55). July, 1981.

Fuchs, L. S., & Deno, S. L. A comparison of teacher judgment, standardized tests, and curriculum-based approaches to reading placement (Research Report No. 56). August, 1981.

Fuchs, L., & Deno, S. The relationship between curriculum-based mastery measures and standardized achievement tests in reading (Research Report No. 57). August, 1981.

Christenson, S., Graden, J., Potter, M., & Ysseldyke, J. Current research on psychoeducational assessment and decision making: Implications for training and practice (Monograph No. 16). September, 1981.

Christenson, S., Ysseldyke, J., & Algozzine, B. Institutional constraints and external pressures influencing referral decisions (Research Report No. 58). October, 1981.

Fuchs, L., Fuchs, D., & Deno, S. Reliability and validity of curriculum-based informal reading inventories (Research Report No. 59). October, 1981.

Algozzine, B., Christenson, S., & Ysseldyke, J. Probabilities associated with the referral-to-placement process (Research Report No. 60). November, 1981.

Tindal, G., Fuchs, L. Christenson, S., Mirkin, P., & Deno, S. The relationship between student achievement and teacher assessment of short- or long-term goals (Research Report No. 61). November, 1981.

Mirkin, P., Fuchs, L., Tindal, G., Christenson, S., & Deno, S. The effect of IEP monitoring strategies on teacher behavior (Research Report No. 62). December, 1981.

Wesson, C., Mirkin, P., & Deno, S. Teachers' use of self instructional materials for learning procedures for developing and monitoring progress on IEP goals (Research Report No. 63). January, 1982.

Fuchs, L., Wesson, C., Tindal, G., Mirkin, P., & Deno, S. Instructional changes, student performance, and teacher preferences: The effects of specific measurement and evaluation procedures (Research Report No. 64). January, 1982.

Potter, M., & Mirkin, P. Instructional planning and implementation practices of elementary and secondary resource room teachers: Is there a difference? (Research Report No. 65). January, 1982.

Thurlow, M. L., & Ysseldyke, J. E. Teachers' beliefs about LD students (Research Report No. 66). January, 1982.

Graden, J., Thurlow, M. L., & Ysseldyke, J. E. Academic engaged time and its relationship to learning: A review of the literature (Monograph No. 17). January, 1982.

King, R., Wesson, C., & Deno, S. Direct and frequent measurement of student performance: Does it take too much time? (Research Report No. 67). February, 1982.

Greener, J. W., & Thurlow, M. L. Teacher opinions about professional education training programs (Research Report No. 68). March, 1982.

Algozzine, B., & Ysseldyke, J. Learning disabilities as a subset of school failure: The oversophistication of a concept (Research Report No. 69). March, 1982.

Fuchs, D., Zern, D. S., & Fuchs, L. S. A microanalysis of participant behavior in familiar and unfamiliar test conditions (Research Report No. 70). March, 1982.

Shinn, M. R., Ysseldyke, J., Deno, S., & Tindal, G. A comparison of psychometric and functional differences between students labeled learning disabled and low achieving (Research Report No. 71). March, 1982.

Thurlow, M. L. Graden, J., Greener, J. W., & Ysseldyke, J. E. Academic responding time for LD and non-LD students (Research Report No. 72). April, 1982.

Graden, J., Thurlow, M., & Ysseldyke, J. Instructional ecology and academic responding time for students at three levels of teacher-perceived behavioral competence (Research Report No. 73). April, 1982.

Algozzine, B., Ysseldyke, J., & Christenson, S. The influence of teachers' tolerances for specific kinds of behaviors on their ratings of a third grade student (Research Report No. 74). April, 1982.

Wesson, C., Deno, S., & Mirkin, P. Research on developing and monitoring progress on IEP goals: Current findings and implications for practice (Monograph No. 18). April, 1982.

Mirkin, P., Marston, D., & Deno, S. L. Direct and repeated measurement of academic skills: An alternative to traditional screening, referral, and identification of learning disabled students (Research Report No. 75). May, 1982.

Algozzine, B., Ysseldyke, J., Christenson, S., & Thurlow, M. Teachers' intervention choices for children exhibiting different behaviors in school (Research Report No. 76). June, 1982.

Tucker, J., Stevens, L. J., & Ysseldyke, J. E. Learning disabilities: The experts speak out (Research Report No. 77). June, 1982.

Thurlow, M. L., Ysseldyke, J. E., Graden, J., Greener, J. W., & Mecklenberg, C. Academic responding time for LD students receiving different levels of special education services (Research Report No. 78). June, 1982.

Graden, J. L., Thurlow, M. L., Ysseldyke, J. E., & Algozzine, B. Instructional ecology and academic responding time for students in different reading groups (Research Report No. 79). July, 1982.

Mirkin, P. K., & Potter, M. L. A survey of program planning and implementation practices of LD teachers (Research Report No. 80). July, 1982.

Fuchs, L. S., Fuchs, D., & Warren, L. M. Special education practice in evaluating student progress toward goals (Research Report No. 81). July, 1982.

Kuehnle, K., Deno, S. L., & Mirkin, P. K. Behavioral measurement of social adjustment: What behaviors? What setting? (Research Report No. 82). July, 1982.

Fuchs, D., Dailey, Ann Madsen, & Fuchs, L. S. Examiner familiarity and the relation between qualitative and quantitative indices of expressive language (Research Report No. 83). July, 1982.

Videen, J., Deno, S., & Marston, D. Correct word sequences: A valid indicator of proficiency in written expression (Research Report No. 84). July, 1982.

Potter, M. L. Application of a decision theory model to eligibility and classification decisions in special education (Research Report No. 85). July, 1982.

Greener, J. E., Thurlow, M. L., Graden, J. L., & Ysseldyke, J. E. The educational environment and students' responding times as a function of students' teacher-perceived academic competence (Research Report No. 86). August, 1982.

Deno, S., Marston, D., Mirkin, P., Lowry, L., Sindelar, P., & Jenkins, J. The use of standard tasks to measure achievement in reading, spelling, and written expression: A normative and developmental study (Research Report No. 87). August, 1982.

Skiba, R., Wesson, C., & Deno, S. L. The effects of training teachers in the use of formative evaluation in reading: An experimental-control comparison (Research Report No. 88). September, 1982.

Martson, D., Tindal, G., & Deno, S. L. Eligibility for learning disability services: A direct and repeated measurement approach (Research Report No. 89). September, 1982.

Thurlow, M. L., Ysseldyke, J. E., & Graden, J. L. LD students' active academic responding in regular and resource classrooms (Research Report No. 90). September, 1982.

Ysseldyke, J. E., Christenson, S., Pianta, R., Thurlow, M. L., & Algozzine, B. An analysis of current practice in referring students for psychoeducational evaluation: Implications for change (Research Report No. 91). October, 1982.

Ysseldyke, J. E., Algozzine, B., & Epps, S. A logical and empirical analysis of current practices in classifying students as handicapped (Research Report No. 92). October, 1982.

Tindal, G., Marston, D., Deno, S. L., & Germann, G. Curriculum differences in direct repeated measures of reading (Research Report No. 93). October, 1982.

Fuchs, L.S., Deno, S. L., & Marston, D. Use of aggregation to improve the reliability of simple direct measures of academic performance (Research Report No. 94). October, 1982.

Ysseldyke, J. E., Thurlow, M. L., Mecklenburg, C., & Graden, J. Observed changes in instruction and student responding as a function of referral and special education placement (Research Report No. 95). October, 1982.